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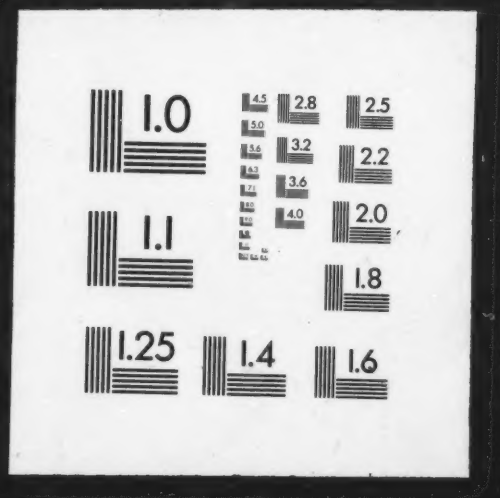

PB88-100102

Risk Assessment, Management, Communication
A Guide to Selected Sources
Second Update

(U.S.) Environmental Protection Agency
Washington, DC

Aug 87

U.S. Department of Commerce
National Technical Information Service
NTIS

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16. ABSTRACT

This is the second update to the March 1987 publication entitled Risk assessment, management, communication: A guide to selected sources. The risk update series is divided into three major sections: Assessment, Management and Communication. This update also includes sections on Chemical Specific Risk Assessment & Management which are arranged by the name of the chemical. This update includes citations from materials published between January and June 1987.

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Risk Assessment, Management, Communication

A Guide to Selected Sources
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Risk Management ..... *

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EPA LIBRARIES ..... *

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This second update to the Guide has been prepared and reviewed by the U.S. Environmental Protection Agency (EPA). Due to the rapidly expanding field of risk information, EPA cannot guarantee that all relevant sources are cited. Publication does not signify that the contents reflect the views of EPA or that EPA endorses the coverage and scope of the subject matter as comprehensive, complete, and appropriate.

INTRODUCTION

This second quarterly update to Risk Assessment, Management, Communication: A Guide to Selected Sources contains references gathered from the following databases: Toxline, Conference Papers Index, ENVIROLINE, National Technical Information Service (NTIS), Public Affairs Information Service (PAIS), ABI Inform, and Legal Resource Index. They cover the period from January through June 1987.

The risk update series is subdivided into three major sections: Assessment, Management, and Communication. consult the Table of Contents for the categories included in each major division. The citations are arranged alphabetically by title. The Chemical Specific Risk Assessment and Chemical Specific Risk Management subsections are grouped by chemical name. Abstracts in the Assessment section have been shortened or eliminated if the content of the article is refelected in the title.

The EPA library network can assist EPA staff and EPA contractors in obtaining materials. Reference copies of the Guide and its updates are available at all EPA libraries. For those outside of EPA, the Guide and updates are available through NTIS at the following address:

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Springfield, VA 22161
703-487-4650

Guide: PB87-185500
1st Update: PB87-203402/AS

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U.S. EPA
401 M Street, S.W.
Washington, D.C. 20460

RISK ASSESSMENT

.... IS THE SCIENTIFIC PROCESS THAT EVALUATES THE POTENTIAL FOR OCCURRENCE OF ADVERSE EFFECT.

GENERAL PERSPECTIVE .... includes cross-media approach, de minimis risk, and uncertainty in assessment.

ASSESSING CHEMICAL HAZARDS,
KENAGA EUGENE E.
ENV SCIENCE & TECHNOLOGY, JUL 86, V20, N7, P660(3)
JOURNAL ARTICLE CHEMICAL HAZARD ASSESSMENT INVOLVES COMPARISONS OF THE MAGNITUDE AND DURATION OF CHEMICAL CONCENTRATIONS IN VARIOUS SEGMENTS OF THE ENVIRONMENT. TESTING IS CONDUCTED AT FEDERAL AND STATE LAWS UNDER A WEALTH OF CONGRESSIONAL MANDATES. THE NEED FOR SUMMARIZING GENERATED INFORMATION IS OBVIOUS AND REQUIRES AN INTERDISCIPLINARY APPROACH TO HAZARD EVALUATION. TO PERFORM MEANINGFUL TOXICITY TESTS, SCIENTISTS MUST BE FAMILIAR WITH THE NATURAL HISTORY OF TEST ORGANISMS AND VARIABLES CONCERNING CHEMICAL OCCURRENCE AND PARTITIONING IN THE ENVIRONMENT. LETHAL DOSE, LETHAL CONCENTRATION, NO-EFFECT CONCENTRATION, AND ACUTE-CHRONIC TOXICITY RATIO CONCEPTS ARE EXAMINED, AS ARE DIVERSE PREDICTIVE METHODS. (ENVL)

[Chemical] risk assessment - general principles
Lovell DP
Br. Ind. Biol. Res. Assoc., Carshalton/Surrey
Toxic Hazard Assess. Chem.; 1986,207-22 (NLM)

Hazard Assessment of Chemicals, Vol. 5
Sasena J ; Editor
1987,436 pp.
Book chem hazard assessment Safety chem book;Safety Of chem. (NLM)

Indoor Air. Volume 6. Evaluations and Conclusions for Health Sciences and Technology. Proceedings of the International Conference (3rd) on Indoor Air Quality and Climate Held in Stockholm on August 20-24, 1984 Swedish Council for Building Research, Stockholm.

Sponsor: Commission of the European Communities, Luxembourg.; Gas Research Inst., Chicago, IL.; Environmental Protection Agency, Washington, DC.; Electric Power Research Inst., Palo Alto, CA.

PB87-108742/XAB

Report No.: D13:1986; ISBN-91-540-4582-7

1986 109p

See also PB85-104222. Sponsored by Commission of the European Communities, Luxembourg, Gas Research Inst., Chicago, IL., Environmental Protection Agency, Washington, DC., and Electric Power Research Inst., Palo Alto, CA.

Country of Publication: Sweden

Table of contents includes the following: Characterization of indoor pollution and sources; Formaldehyde: Sources, methods of analysis, exposure and health effects; Radon in dwellings: Exposure and risk analysis; Air ions and electrical fields; Fibres and particulates in the indoor environment; Passive smoking and health effects; Microorganisms related to buildings; The importance of indoor air pollution to personal exposures in industrialized societies; The importance of indoor air pollution to personal exposures in developing countries; Epidemiological studies of health disorders related to housing; Odors and sensory irritants: Effects on health and comfort; Allergies and other hypersensitivity reactions to indoor pollutants: Indoor thermal climate: Requirements for comfort, health and performance; Ventilation criteria: Biological demands and formulation of standards; Building performance assessment; Technical solutions to providing adequate indoor air quality and thermal climate; Sick buildings: Physical and psychosocial features, effects on humans and preventive measures; Policy and regulatory issues; The 'sick' building syndrome. (NTIS)

Risk assessment and comparisons: an introduction.

Wilson R ; Crouch EA

Department of Physics, Harvard University, Cambridge, MA 02138.

Science; VOL 236, ISS 4799, 1987, P267-70

Risk assessment is presented as a way of examining risks so that they may be better avoided, reduced, or otherwise managed. Risk implies uncertainty, so that risk assessment is largely concerned with uncertainty and hence with a concept of probability that is hard to grasp. The results of even the simplest risk assessments need to be compared with similar assessments of commonplace situations to give them some meaning. We compare and contrast some risk estimates to display their similarities and differences. (NLM)

Risk assessment and control decisions for protecting drinking water quality
Cotruvo JA
Off. Drinking Water, U. S. Environ. Prot. Agency, Washington
Adv. Chem. Ser.; VOL 214, ISS Org. Pollut. Water, 1987,693-733 (NLM)

RISK ASSESSMENT OF MICROBIAL APPLICATIONS IN BIOTECHNOLOGY
LINCOLN D
SAXENA, J. (ED.). HAZARD ASSESSMENT OF CHEMICALS, VOL. 5. XV+436P. HEMISPHERE PUBLISHING CORP.: CAMBRIDGE, ENGLAND; NEW YORK, N.Y., USA. ILLUS. ISBN 0-89116-450-2.; 0 (0). 1987. 199-232. (NLM)

****

ASSESSMENT GUIDELINES

HYDROLYTIC STABILITY OF CHEMICALS: A COMPARISON OF EPA AND OECD PROTOCOLS AND SUGGESTIONS FOR A COMBINED UNIVERSAL METHOD
GRAYSON B. T.
SHELL RESEARCH LTD, UK,
PESTICIDE SCIENCE, 1986, V17, P277(10)
JOURNAL ARTICLE RECENT EPA AND OECD GUIDELINES FOR DETERMINING THE RATE OF HYDROLYSIS OF CHEMICALS ARE CONTRASTED. (ENVL)

****

QUANTITATIVE RISK ASSESSMENT AND PHARMACOKINETICS .... includes clinical and physiological pharmacokinetics, drug metabolism, acceptable dail intake (ADI), quantitative structure-activity relationship (QSAR), dose-response relationship.

The merits of quantitative risk assessment vs. TLV approaches to on-criteria pollutant standards
Hui SP ; Batchelder JB Jr ; Dawson SV
California Air Resour. Board, Sacramento
Proc. APCA Annu. Meet.; VOL 79th, ISS Vol. 5, 1986,86/72.5, 12 pp.
A review with 22 refs. in which quant. risk assessment of toxic air pollutants was compared with the TLV (Threshold Limit Value) method with respect to human. (NLM)

A quantitative risk assessment approach for accidental releases of toxic air pollutants from transportation of hazardous substances
Doyle R; Lathrop J
Proc APCA Annu. Meet.; VOL 79th, ISS Vol. 1, 1986,86/14.5, 16 pp. (NLM)

****

METHODS OF ESTIMATING AND MEASURING RISK

ANALYSIS AND INTERPRETATION OF LONG-TERM RODENT STUDIES AND ATTENDANT PROBLEMS OF RISK ASSESSMENT
YOUNG SS
LLOYD, W. E. (ED.). SAFETY EVALUATION OF DRUGS AND CHEMICALS; SYMPOSIUM, AMES, IOWA, USA, JUNE 1-4, 1981. XVIII+487P. HEMISPHERE PUBLISHING CORP.: NEW YORK, NEW YORK, USA; LONDON, ENGLAND (DIST. OUTSIDE THE USA BY MCGRAW-HILL INTERNATIONAL BOOK CO.: AUCKLAND, NEW ZEALAND; LONDON, ENGLAND). ILLUS. ISBN 0-89116-352-2.; 0 (0). 1986. 385-404. (NLM)

DOSE-DAMAGE THRESHOLD INFORMATION AND AN ATMOSPHERIC ENVIRONMENTAL RISK ASSESSMENT PROCEDURE,
JAKEMAN A. J. ; GREENWAY M. A. ; SIMPSON R. W.
AUSTRALIAN NATL UNIV, AUSTRALIA,
CLEAN AIR IN AUSTRALIA, FEB 86, V20, N1, P7(7)
JOURNAL ARTICLE AIR POLLUTION DOSE-DAMAGE DATA ARE REVIEWED FOR IDENTIFYING THE RISKS OF AMBIENT AIR POLLUTANTS TO TARGET RECEPTORS IN THE INDUSTRIALIZED HUNTER REGION OF AUSTRALIA. THERE IS, IN GENERAL, A SAFETY MARGIN BETWEEN MAXIMUM AMBIENT CONCENTRATIONS AND SPECIFIED DAMAGES IN THE REGION. CONCENTRATION MAXIMA ARE PREDICTED AND DAMAGES ARE DISCUSSED FOR SULFUR DIOXIDE, PARTICULATES, FLUORIDES, NITROGEN DIOXIDE, AND OXIDANTS. THE EFFECTS OF POLLUTANT COMBINATIONS ON HUMAN HEALTH, MATERIALS, AND VEGETATION ARE ALSO ANALYZED. (ENVL)

Fault Tree Analysis of Nuclear Power Plants, Components and Systems. 1975-January 1987
(Citations from the INSPEC: Information Services for the Physics and Engineering Communities Database)
(Rept. for 1975-Jan 87)
National Technical Information Service, Springfield, VA.
PB87-854410/XAB
Jan 87 32p

This bibliography contains citations concerning risk assessment, reliability analysis, failure analysis, and safety studies of nuclear power plant components and systems using fault tree analysis methods. Faults caused by components, human error, environmental considerations, and common mode failures are presented. Various systems and components are analyzed including high pressure safety injection, auxiliary feedwater, instrumentation, emergency core flooding and cooling, and steam generator tubing. (Contains 56 citations fully indexed and including a title list.) (NTIS)

HAZARD: an expert system for risk assessment of environmental chemicals.
Gottinger HW
Methods Inf Med; VOL 26, ISS 1, 1987, P13-23
Keywords: Carcinogens, Environmental *ADVERSE EFFECTS, Drug Screening Expert Systems *, Human, Risk, Structure-Activity Relationship (NLM)

Lognormal model for health risk assessment of fluctuating concentrations.
Saltzman BE
Am Ind Hyg Assoc J; VOL 48, ISS 2, 1987, P140-9
Health risk assessments of exposures to harmful materials increasingly are required because of legal and economic pressures. An important part of the procedure is the mathematical model for the dose-effects relationship. If a linear no-threshold relationship is assumed, then the mean of fluctuating concentrations may be used for the calculation of health risk. But the widely used PEL and TLV values assume a threshold relationship. For this and for nonlinear relationships the calculation with the use of the mean concentration is inaccurate, because higher concentrations produce disproportionately higher effects. An appropriate mathematical model based upon lognormal concentrations and probit effects is proposed. Rather than monitoring concentrations for unlikely high values, the method requires estimation of their geometric mean and geometric standard deviation. A health risk assessment than may be calculated simply and conveniently from the charts and tables provided. The method clarifies some issues and the specifics of utilizing and improving the required data. The model should be useful for assessing health risks from fluctuating concentrations of most toxic compounds. (NLM)

Mutagens in water sources: detection and risk assessment
Tye RJ
J. Inst. Water Eng. Sci.; VOL 40, ISS 6, 1986,541-8
A review with 22 refs. on short-term tests for mutagenicity of

water borne chems. (NLM)

Playing the Odds
Johnston, Robert E.
Infosystems v34n4 PP: 32-37 Apr 1987

Automated risk analysis software can help avoid gambling on system vulnerability. Applying risk analysis, a respected but rarely used process, is not unlike writing a computer program. If the user leaves out a critical element, the process will not work. Risk analysis was hailed as the savior of computer security in the early 1970s. In 1984, the first microcomputer-based risk analysis packages appeared. Whether the product is micro- or mainframe-based, however, the problem remains the same as before automation of the process: it often demands more effort than more conventional processes. The risk analysis process can be divided into 4 components: 1. identification of risks, 2. identification of threats, 3. recognition of vulnerabilities, and 4. documentation of controls. Several packages are described. For example, the Bayesian Decision Support System is a flexible, detailed, or summary-level process that reduces the effort normally associated with quantitative risk analysis. Tables. (ABI)

Risk assessment and food safety: a scientist's and regulator's view.
Scheuplein, Robert J.
Food Drug Cosmetic Law Journal 42 n2 237-250 April 1987
illustration; graph; chart (LRI)

RISK ASSESSMENT IN PRACTICE: BHOPAL,
SLATER D. H.
TECHNICA LTD,
CHEMICAL ENGINEERING IN AUSTRALIA, MAR 86, V11, N1, P12(5)
JOURNAL ARTICLE THE DESIGN AND OPERATION OF THE UNION CARBIDE PLANT IN BHOPAL, INDIA, IS SIMILAR TO THAT OF MANY OTHER CHEMICAL PLANTS. ADDITIONAL TECHNIQUES ARE BEING SOUGHT FOR INCORPORATION IN THE DESIGN PROCESS OF CHEMICAL PLANTS. THE QUESTION OF WHETHER AVAILABLE TECHNOLOGY WOULD HAVE MADE A DIFFERENCE IN BHOPAL IS ADDRESSED BY APPLYING STANDARD RISK ANALYSIS METHODOLOGY TO THE PLANT. SIMULATION MODELING INDICATES A LOGICAL SEQUENCE OF FAILURES AND CONSEQUENCES WHICH EXPLAIN THE EVENTS AT BHOPAL. THE SUCCESS IN SIMULATING THE OBSERVED EFFECTS IS FURTHER SUPPORT FOR USING NUMERICAL RISK ANALYSIS TECHNIQUES AS AN AID TO DESIGN, SITING, AND CONTINGENCY MEASURES FOR MAJOR HAZARD INSTALLATIONS. (ENVL)

Risk assessment of trace element emissions from an urban oil-fired power plant
Sapperstein MD
Diss. Abstr. Int. B 1986, 47(4), 1473; 1986,125 pp.

Screening the potential risks of toxic substances using a multimedia compartment model: estimation of human exposure
McKone TE ; Layton DW
Environ. Sci. Div., Lawrence Livermore Natl. Lab., Livermore
Regul. Toxicol. Pharmacol.; VOL 6, ISS 4, 1986,359-80
A multimedia compartment model that was developed for screening toxic substances is described. This model, referred to as GEOTOX,usesa combination of phys., chem.,and landscape propertiestœestablish the partitioning, reaction, and interphase-transportcharacteristicsofachem. These properties are used to est. concns. in the air, soil, water, and food of a representative or generic environment. These concns. are used in exposure-pathway models to calc. the quantities absorbed by humans; then, dose-response data are used to est. health risks. The capability of GEOTOX as a screening tool is illustrated in a sample ranking of 3 chem. [i.e., 2,4,6-trinitrotoluene (I) [118-96-7], hexahydro-1,3,5-trinitro-1,3,5-triazine [121-82-4], and benzene [71-43-2] being continuously added to the upper-soil compartment. Ranking based on both toxic potency and environmental fate can enhance the risk-management process when compared to ranking based on toxic potency alone. (NLM)

STARA (Studies on Toxicity Applicable to Risk Assessment) Toxicity Data Base
(Environmental research brief)
Farren, C. B. ; Hertzberg, R. C.
Environmental Protection Agency, Cincinnati, OH. Environmental Criteria and Assessment Office.
PB87-117412/ZAB
Report No.: EPA/600/M-86/016
Sep 86 9p
The Environmental Criteria and Assessment Office of the U.S. Environmental Protection Agency (EPA) has developed a toxicity data base to aid in the development of risk assessment methodologies and the assessment of health hazards from hazardous waste sites and chemical spills. The data base currently contains detailed animal toxicity data on nearly 200 chemicals and epidemiologic data on 30 chemicals. All relevant publications and original research articles describing the toxicity of a specific chemical were examined. Useful dose-effect data were extracted and encoded, and entered into EPA's IBM computer. Graphic summaries are generated by plotting exposure level vs. exposure duration. Statistical models to calculate human equivalent dose and duration have been

programmed into the data base so that data on several species can be displayed on a single graph. (NTIS)

TECHNIQUES AND MODELS TO ESTIMATE THE HEALTH BENEFITS OF CONTROLLING TOXIC SYBSTANCES EMITTED FROM COAL-FIRED POWER PLANTS,

EPRI REPORT EA-4490, MAR 86 (156)

ASSN REPORT MODELS AND DATA APPROPRIATE FOR HEALTH RISK ANALYSIS WEREANALYZED FOR THEIR APPLICATION TO HEALTH BENEFITS ESTIMATION OF CONTROLLING COAL-FIRED POWER PLANT TOXIC EMISSIONS. A RISK FRAMEWORK DEVELOPED TRACES THE TOXIC POLLUTANT FROM ITS SOURCE AT THE POWER PLANT THROUGH VARIOUS ENVIRONMENTAL MEDIA TO EXPOSURE TO THE PUBLIC. IT CAN BE USED WITH SUITABLE MODIFICATIONS TO ANALYZE EITHER POLLUTANT CONTROL OPTIONS FOR A SPECIFIC FACILITY OR FOR CONTROL SCHEMES FOR POWER PLANTS IN GENERAL. RISK ASSESSMENT MODELS USED FOR DETERMINING HUMAN HEALTH EFFECTS ARE DESCRIBED, AS ARE WAYS OF BALANCING HEALTH RISKS AGAINST THE COSTS OF CONTROLLING THE POLLUTANT. (NTIS)

Urban air toxics exposure and risk assessment - a modeling approach

Liu CS ; Yan S ; Anderson GE : Lunberg G

Proc. - APCA Annu. Meet.; VOL 79th, ISS Vol. 1, 1986,86/14.4, 10 pp.

Toxic air pollutant exposure model, Urban air pollution exposure model;Air pollution By toxic compds., population exposure to and health risks from, assessment of, model for, in South Coast Air Basin of California Urban;Carcinogens Air pollution by, exposure to and health risks from, assessment of, model for, in South Coast Air Basin of California;Health hazard From exposure to toxic chems., assessment of, model for, in South Coast Air Basin of California (NLM)

Use of biomarkers in risk assessment

Hart, R.W.

Association of Clinical Scientists 79th Meeting 8640170 Atlanta, GA (USA) 13-16 Nov 1986

Association of Clinical Scientists

Institute for Clinical Science, 230 N. Broad Street, Room 14301 NCB, Philadelphia, PA 19102 (USA), Price: $75.00 (institutions); $50.00 (individuals) (CPI)

HEALTH RISKS

GENERAL

Health Effects Research Lab., Research Triangle Park, NC.
Discussion (Research Issues to Facilitate Risk Assessment of Toxic Air Pollutants).
Graham JA
Govt Reports Announcements & Index (GRA&I), Issue 05, 1987
NTIS/PB87-115671, 6p
EPA/600/J-83/353
Given the excellence of the 'Critical Review of Toxic Air Pollutants', the discussion will expand on a few points raised by Dr. Goldstein rather than critique his comments. Because Dr. Goldstein and the other discussants have addressed carcinogenesis issues so well, the author will limit her comments to noncarcinogenic endpoints. Focus is placed on health research elements which feed into risk assessment using the basic premise that a risk assessment can be no better than the data being assessed. The discussion will be organized according to the elements of research risk assessment and risk management described by Dr. Goldstein and the National Academy of Sciences panel. Dr. Goldstein's convention of TAP, standing for Toxic Air Pollutants, will be used. Journal article, Pub. in Jnl. of the Air Pollution Control Association 33, n9 p837-840 Sep 83. (NLM)

Health risk assessment of chemical mixtures
Mehlman MA ; Witz G
Proc. - APCA Annu. Meet.; VOL 79th, ISS Vol. 1, 1986,86/13.6, 17 pp. (NLM)

Theoretical background of carcinogenic risk assessment of chemical substances.
Hayama T
Suishitsu Odaku Kenkyu; VOL 9, ISS 9, 1986,544-9
A review and discussion with 3 refs., on the title study, discussing in vivo handling of toxic substances, mechanism of chem. carcinogens, carcinogenic assessment of chem. substances, differences in response of bioorganisms to chem. substances, and methods for evaluation of permissible concn. of chem. substances. (NLM)

HEALTH RISKS

CANCER ....includescarcinogenesis, carcinogens, carcinogenicity, genetics, epidemiology, and multi-media exposure.

Assessment of the risk of formation of carcinogenic N-nitroso compounds from dietary precursors in the stomach.
Shephard SE ; Schlatter C ; Lutz WK
Institute of Toxicology, Swiss Federal Institute of Technology, Schwerzenbach, Switzerland.
Food Chem Toxicol; VOL 25, ISS 1, 1987, P91-108
A literature review has shown that the daily intakes of various N-nitroso-precursor classes in a typical European diet span five orders of magnitude. Amides in the form of protein, and guanidines in the form of creatine and creatinine, are the nitrosatable groups found most abundantly in the diet, approaching levels of 100 g/day and 1 g/day, respectively. Approximately 100 mg of primary amines and amino acids are consumed daily, whereas aryl amines, secondary amines and ureas appear to lie in the 1-10 mg range. The ease of nitrosation of each precursor was estimated, the reactivities being found to span seven orders of magnitude, with ureas at the top and amines at the bottom of the scale. From this information and an assessment of the carcinogenicity of the resulting N-nitroso derivatives, the potential health risk due to gastric in vivo nitrosation was calculated. (NLM)

Assessment of unscheduled and replicative DNA synthesis in rat kidney cells exposed in vitro or in vivo to unleaded gasoline.
Loury DJ ; Smith-Oliver T ; Butterworth BE
Chemical Industry Institute of Toxicology, Department of Genetic Toxicology, Research Triangle Park, North Carolina 27709.
Toxicol Appl Pharmacol; VOL 87, ISS 1, 1987, P127-40 (NLM)

Cancer risk assessment and government regulation to protect public health
Scroggin, D.G.
American Chemical Society 192nd Meeting 8630396 Anaheim, CA (USA) 7-12 Sep 1986
American Chemical Society (ACS)
ACS Distribution Office, 210, 1155 16th Street, N.W., Washington, DC 20036 (USA). Telephone: (202) 872-4405, Contact specific authors of specific papers for copies of entire papers. ACS will publish a book of abstracts. Price: $34.00 (CPI)

Identification and comparative risk assessment of airborne carcinogens from combustion sources
Lewtas J ; Nishioka MG ; Petersen BA
Report; ISS EPA/600/D-86/013; Order No. PB86-145786/GAR,, 1986,54 pp. (NLM)

Mechanisms of DNA Damage and Repair: Implications for Careinogenesis and Risk Assessment.
Basic Life Sciences, Vol. 38
Simic MG ; Grossman L ; Upton AC ; Editors
[Proceedings of a Symposium Held June 2-7, 1985 in Gaithersburg, Md.] 1986,578 pp. (NLM)

NEW APPROACHES IN RISK ASSESSMENT FOR CARCINOGENS,
PERERA FREDERICA
COLUMBIA UNIV,
RISK ANALYSIS, 1986, V6, N2, P195(7)
JOURNAL ARTICLE METHODS ARE NEEDED TO IMPROVE THE ABILITY OF BIOMONITORING AND EPIDEMIOLOGICAL STUDIES TO IDENTIFY POTENTIAL CARCINOGENIC HAZARDS AND TO QUANTIFY HUMAN RISK. THE LIMITATIONS OF PHARMACOKINETIC MODELS CAN BE MITIGATED BY THE DIRECT MEASUREMENT OF MOLECULAR MARKERS OF BIOLOGICALLY EFFECTIVE DOSE OF CARCINOGEN. PARALLEL ANIMAL AND HUMAN STUDIES ARE RECOMMENDED AS A MEANS OF VALIDATING THESE MARKERS. THE USE OF DNA ADDUCTS AS INDICATORS OF BIOLOGICALLY EFFECTIVE DOSE IS CONSIDERED. (ENVL)

Occupational risks for meningiomas of the CNS in Sweden.
McLaughlin JK ; Thomas TL ; Stone BJ ; Blot WJ ; Malker HS ; Wiener JA ; Ericsson JL ; Malker BK
J Occup Med; VOL 29, ISS 1, 1987, P66-8
Using the Cancer-Environment Registry of Sweden, which links cancer incidence (1961 to 1979) with census information (1960) for all employed individuals in Sweden, a systematic, population-based assessment was made of the occurrence of meningiomas of the CNS according to industrial and occupational classifications. Statistically significant standardized incidence ratios (SIR) between 5 and 6 for meningioma were observed among glass, porcelain, or ceramic workers of both sexes. SIRs of similar magnitude were also found for men employed in the headwear fabrication and book publishing industries. Significantly elevated two- to three-fold risks were observed for men employed in health care, railroad and trolley construction, sheet and plate metal fabrication, and as moving equipment operators. Some of the findings of this descriptive survey may have arisen as a result of multiple comparisons, but several are

consistent with earlier observations for brain cancer from other countries and deserve further study. (NLM)

Occupational risks for renal cancer in Sweden.
McLaughlin JK ; Malker HS ; Stone BJ ; Weiner JA ; Malker BK ; Ericsson JL ; Blot WJ ; Fraumeni JF Jr
Biostatistics Branch, National Cancer Institute, Bethesda, Maryland 20892.
Br J Ind Med; VOL 44, ISS 2, 1987, P119-23 (NLM)

RELATIVE POTENCY OF CHEMICAL CARCINOGENS IN RODENTS,
GAYLOR DAVID W. ; CHEN JAMES J.
NATL CENTER FOR TOXICOLOGICAL RESEARCH, AR,
RISK ANALYSIS, 1986, V6, N3, P283(8)
JOURNAL ARTICLE CARCINOGENESIS DATA COMPILED FOR 770 COMPOUNDS TESTED IN 2944 CHRONIC BIOASSAYS IN ANIMALS PROVIDE AN OPPORTUNITY TO COMPARE CANCER RATES ACROSS ANIMAL SPECIES. COMPARISONS DISCUSSED ARE RESTRICTED TO THE MOST FREQUENTLY TESTED SPECIES: RATS, MICE, AND HAMSTERS. THE RATIO OF THE MINIMUM TD50, THE CHRONIC DOSE RATE WHICH HALVES THE PERCENTAGE OF TUMOR-FREE ANIMALS AT THE END OF AN EXPERIMENT, PROVIDES A MEASURE OF THE RELATIVE POTENCY BETWEEN TWO SPECIES FOR EACH COMPOUND ADMINISTERED. THE GEOMETRIC MEANS OF THE RATIOS OF MINIMUM TD50S FOR RATS:MICE ARE 1/2.2 AND 1/1.3 FOR DIET AND GAVAGE, RESPECTIVELY. IN GENERAL, THE MINIMUM TD50 IS LOWEST FOR THE RAT AND HIGHEST FOR THE HAMSTER. (ENVL)

Risk assessment and evaluation of chemical carcinogens--present and future strategies.
Henschler D
Institut f:ur Pharmakologie und Toxikologie der Universit:at, W:urzburg, Federal Republic of Germany.
J Cancer Res Clin Oncol; VOL 113, ISS 1, 1987, P1-7 (NLM)

HEALTH RISKS

GENOTOXICITY AND REPRODUCTIVE EFFECTS .... includes development and reproductive effects; embryo and fetal effects, fertility, exposure during pregnancy, teratogenicity, mutagenesis and mutagenicity; genetics and carcinogenesis; and neoplasia.

INTERAGENCY REGULATORY LIAISON GROUP WORKSHOP ON REPRODUCTIVE TOXICITY RISK ASSESSMENT,
ENV HEALTH PERSPECTIVES, APR 86, V66, P193(29)
JOURNAL ARTICLE HIGHLIGHTS OF A WORKSHOP HELD IN ROCKVILLE, MD, DURING SEPTEMBER 21-23, 1981, FOCUSING ON THE EVALUATION OF DATA FOR RISK ASSESSMENT IN REPRODUCTIVE TOXICOLOGY ARE COMPILED. PROCEDURES AVAILABLE FOR ASSESSING RISK FROM AVAILABLE HUMAN AND ANIMAL DATA WERE DISCUSSED, AS WAS INFORMATION AVAILABLE ON MECHANISMS OF ACTION AND ITS USE IN INTERPRETATION OF EXPERIMENTAL DATA TO HELP EXPLAIN INTERSPECIES VARIATION IN RESPONSE. EMPHASIS WAS PLACED ON ENDPOINTS OF TERATOGENICITY AND REPRODUCTIVE TOXICITY, AND THE ROLE OF PHARMACOKINETICS IN REPRODUCTIVE AND DEVELOPMENTAL TOXICOLOGICAL RESEARCH. EPIDEMIOLOGIC METHODS FOR COLLECTION OF DATA AND STATISTICAL TECHNIQUES FOR THE ANALYSIS OF DATA ARE OUTLINED. (ENVL)

Intragenomic heterogeneity in DNA damage processing: potential implications for risk assessment
Hanawalt PC
Basic Life Sci.; VOL 38, ISS Mech. DNA Damage Repair, 1986,489-98
A review with 45 refs. on 3 examples of intragenomic heterogeneity in DNA repair in mammalian genomes. (NLM)

CHEMICAL SPECIFIC RISK ASSESSMENT

BENZENE

Benzene and leukemia. An epidemiologic risk assessment.
Rinsky RA ; Smith AB ; Hornung R ; Filloon TG ; Young RJ ; Okun AH ; Landrigan PJ
National Institute for Occupational Safety and Health, Division of Surveillance, Hazard Evaluations, and Field Studies, Cincinnati, OH 45226.
N Engl J Med; VOL 316, ISS 17, 1987, P1044-50
To assess quantitatively the association between benzene exposure and leukemia, we examined the mortality rate of a cohort with occupational exposure to benzene. Cumulative exposure for each cohort member was estimated from historical air-sampling data and, when no sampling data existed, from interpolation on the basis of existing data. (NLM)

CADMIUM

Logistic Regression Analysis of Cadmium-Induced Renal Abnormalities
Ellis, K. J. ; Yuen, K. ; Cohn, S. H.
Brookhaven National Lab., Upton, NY.
Sponsor: Department of Energy, Washington, DC.
DE86014174/XAB
Report No.: BNL-38374; CONF-860297-1
Feb 86 20p
International cadmium conference, San Francisco, CA, USA, 1 Feb 1986.
Portions of this document are illegible in microfiche products.
Contract No.: AC02-76CH00016
Cases of renal dysfunction associated with cadium exposure have been reported in Belgium, Great Britian, Japan, United States, and Sweden. Indirect estimates of body burden were often based on the measurement of environmental exposure conditions or on tissue concentrations in urine, blood, saliva, or hair clippings. More recently, however, the direct in vivo assessment of liver and kidney cadmium burden in humans has provided additional data. Sufficient data on humans does exist, however, to make reasonable estimates of the increased risk for cadmium-induced renal dysfunction. In the present paper, a linear logistic regression model has been developed on the basis of liver and kidney cadmium burden. These relationships are discussed with respect to the concept of a critical concentration for the renal cortex. 14 refs., 3 figs., 2 tabs. (ERA citation 11:048902) (NTIS)

DIETHYLNITROSAMINE

Molecular dosimetry of O4-ethyldeoxythymidine in rats continuously exposed to diethylnitrosamine.
Boucheron JA ; Richardson FC ; Morgan PH ; Swenberg JA
Department of Biochemical Toxicology, Chemical Industry Institute of Toxicology, Research Triangle Park, North Carolina 27709.
Cancer Res; VOL 47, ISS 6, 1987, P1577-81
There is considerable interest in incorporating mechanistically based biological data into the process of quantitative risk assessment. Presently, no adequate data bases for internal dosimeters, such as DNA adducts, exist for humans or experimental animals. (NLM)

DIOXIN

Acute toxicity in the guinea pig and in vitro "dioxin-like: activity of the environmental contaminant 1,2,4,5,7,8-hexachloro (9H)xanthene.
DeCaprio AP ; Briggs R ; Gierthy JF ; Kim JC ; Kleopfer RD
J Toxicol Environ Health; VOL 20, ISS 3, 1987, P241-8
A number of sites in the state of Missouri have been contaminated with polychlorinated dibenzodioxins and dibenzofurans as a result of improper waste-oil application for dust control. In addition to these compounds, relatively high levels of 1,2,4,5,7,8-hexachloro(9H)xanthene (1,2,4,5,7,8-HCX), a by-product of hexachlorophene manufacture, were also detected. Unlike the dibenzodioxins and dibenzofurans, no animal toxicity data are available on the chlorinated xanthenes. (NLM)

A critical examination of assumptions used in risk assessments of dioxin contaminated soil.
Paustenbach DJ ; Shu HP ; Murray FJ
Syntex Inc., Palo Alto, California 94303.
Regul Toxicol Pharmacol; VOL 6, ISS 3, 1986, P284-307
Environmental standards for 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxin, TCDD) are currently being considered by regulatory agencies worldwide. Among these are limits for tap water, soil at industrial sites, residential soil, fish, ambient air, and fly ash. Thus far, in the United States, no standards have been promulgated but a few have been suggested. This paper critically evaluates several aspects of previously proposed approaches to setting limits for TCDD in residential soil and soil within industrial sites. (NLM)

Dioxin emissions from modern, mass fired, stoker/boilers for use in waste-to-energy risk assessments
Hahn JL
Proc. - APCA Annu. Meet.; VOL 79th, ISS Vol. 3, 1986,86/50.12, 8 pp.
Polychlorinated dibenzodioxin emission waste incineration Dibenzofuran emission waste incineration boiler;Air pollution By polychlorinated dibenzo-p-dioxins and dibenzofurans, from municipal solid waste incineration, in waste-to-energy plants;Firing of furnaces With municipal solid wastes, in waste-to-energy plants, polychlorinated dibenzo-p-dioxin and dibenzofuran emissions from;Flue gases From incineration of municipal solid wastes, in waste-to-energy plants, polychlorinated dibenzo-p-dioxin and dibenzofuran emissions from;Waste solids Incineration of, in waste-to-energy plants, polychlorinated dibenzo-p-dioxin and dibenzofuran emissions from, risk assessment in relation to Municipal refuse (NLM)

DIOXINS AND FURANS IN THE ENVIRONMENT: EVALUATING TOXICOLOGICAL RISK FROM DIFFERENT SOURCES BY MULTI-CRITERIA ANALYSIS,
HUTZINGER O. ; BERG M. V. ; OLIE K. ; OPPERHUIZEN A. ; SAFE S.
UNIV OF BAYREUTH, W GERMANY,
DIOXINS IN THE ENV (HEMISPHERE) REPORT, 1985, P9(22)
BOOK BOTH ENVIRONMENTAL AND OCCUPATIONAL EXPOSURES TO POLYCHLORINATED DIBENZODIOXINS (PCDDS) AND DIFURANS (PCDFS) ARE SIGNIFICANT. KEY SOURCES OF PCDDS AND PCDFS ARE IDENTIFIED AS CHEMICAL MANUFACTURING PROCESSES, COMBUSTION, AND WASTE DISPOSAL SITES. COMMON BIOLOGICAL AND TOXIC EFFECTS ARE SUMMARIZED. THE USE OF IN VITRO BIOASSAYS IS DISCUSSED AS A METHOD OF HAZARD ASSESSMENT FOR THESE COMPOUNDS. THE PROBLEM OF JUDGING SEVERAL PCDD/PCDF POLLUTION SOURCES USING A NUMBER OF UNRELATED CRITERIA CAN BE APPROACHED BY APPLYING MULTICRITERIA ANALYSIS METHODOLOGY. THE ELECTRE TECHNIQUE FOR RANKING AND SELECTING ALL SOURCES IS EXPLAINED. (ENVL)

LEAD

Gasoline Lead in Urban and Rural Play Areas
LaBelle, S. J.
Argonne National Lab., IL. Center for Transportation Research.
Sponsor: Department of Energy, Washington, DC.
DE86014594/XAB
Report No.: CONF-8605179-1
1986 24p
World conference on transport research, Vancouver, Canada, 12 May 1986.
Contract No.: W-31-109-ENG-38

Leaded gasoline used as fuel for automobiles and trucks has been implicated as a source of lead that eventually reaches small children. Lead has deleterious effects on cognitive development of pre-school age children. Although allowable levels of lead in gasoline were reduced 90% on January 1, 1986, in the US, lead previously accumulated in soil will remain. Measurements of surface soil lead in Illinois play areas revealed higher accumulations in center city and suburban areas than in much less densely settled urban and rural areas outside the Chicago area (downstate llinois). The results of the soil analysis in this study do not address the larger question of pathways for child-lead ingestion and consequent health effects. However, based on results of the study in the Chicago area, other high traffic suburban areas may wish to consider review of their soils. Risk assessment has not been undertaken, but may be the next step in determining the extent of hazard posed to small children from surface cumulations of lead. (ERA citation 11:052042) (NTIS)

METHYLENE CHLORIDE

Physiologically based pharmacokinetics and the risk assessment process for methylene chloride
Andersen ME ; Clewell HJ II ; Gargas ML ; Smith FA ; Reitz RH
Biochem. Toxicol. Branch, Armstrong Aerosp. Med. Res. Lab., Wright-Patterson Air Force Base
Toxicol. Appl. Pharmacol.; VOL 87, ISS 2, 1987,185-205
Methylene chloride (DCM) [75-09-2] is metabolized by 2 pathways; 1 dependent on oxidn. by mixed-function oxidase (MFO) [9040-60-2] and the other dependent on glutathione S-transferase (GST) [50812-37-8]. A physiol. based pharmacokinetic (PB-PK) model based on knowledge of these pathways was used to describe the metab. of DCM in 4 mammalian species (mouse, rat, hamster, and humans). (NLM)

GENERAL

Aerosols: Research, Risk Assessment and Control Strategies.
Lee SD ; Schneider T ; Grant LD ; Verkerk PJ ; Editors
[Proceedings of the 2nd U.S.-Dutch International Symposium, Williamsburg, Va., May 19-25, 1985]
1986, 1221 pp. (CPI)

WORST CASE ANALYSIS STUDY ON FOREST PLANTATION HERBICIDE USE,
WASHINGTON DEPT NATURAL RESOURCES REPORT, MAY 86 (9)
STATE/LOCAL GOVT REPORT THE LIKELIHOOD AND SEVERITY OF POTENTIAL HEALTH EFFECTS IN HUMANS FROM SEVEN HERBICIDES ARE ANALYZED UNDER CONDITIONS ASSOCIATED WITH THEIR AERIAL APPLICATION IN WASHINGTON FORESTS. ELEMENTS OF UNCERTAINTY INHERENT IN THE EXPOSURE ASSESSMENT, HAZARD ASSESSMENT, AND RISK CHARACTERIZATION PROCESSES ARE DISCUSSED. VARIOUS ELEMENTS OF UNCERTAINTY ARE ADDRESSED BY CONDUCTING A WORST CASE ANALYSIS. HIGHEST ESTIMATED CANCER RISKS FROM OCCUPATIONAL EXPOSURES ARE DETERMINED FOR HERBICIDE LOADERS. WORST CASE ESTIMATES OF CANCER RISK RANGE FROM 40 PER TRILLION FOR PICLORAM TO 0.1 PER MILLION FOR ATRAZINE. MARGINS OF SAFETY FOR SYSTEMIC, REPRODUCTIVE, AND TERATOGENIC EFFECTS RANGE FROM 22 TO OVER 100,000. (NTIS)

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HAZARDOUS WASTE

Analysis of the issues related to sea dumping of radioactive wastes.
Bewers, J. M. and C. J. R. Garrett.
Marine Policy 11:105-24 Ap '87, tables
History of regulation through the London Dumping Convention; oceanographic and radiological bases for risk assessment. (PAIS)

Are Resource Recovery Plants the Answer to Local Waste Problems?
Anonymous
Public Utilities Fortnightly v118n12 PP: 53-55 Dec 11, 1986
AVAILABILITY: Public Utilities Reports, Inc., Rosslyn Center Bldg., Suite 2100, 1700 Moore St., Arlington, VA 22209

In California in the 1970s, resource recovery projects, which burn municipal solid waste to run a generator providing electricity, held great promise for conservation. However, refuse was readily disposed of into landfills, and no resource recovery projects were built. With increasing scarcity of available land, proposals for resource recovery plants are reappearing. There are 2 major types of resource recovery plants -- mass burn and refuse-derived fuel. One mass-burn facility, the San Diego energy recovery project in southern California, will process 2,300 tons of trash a day and produce 60 megawatts of power. The Bay area resource recovery project, a refuse-derived facility, will process 2,750 tons of solid waste a day and produce 78 megawatts of power. The permitting process included project description, environmental impact assessment, and public health risk assessment. (ABI)

Assessing Exposure to Toxic Substances from Land Disposal of Hazardous Wastes

Fingleton, D. J. ; Oezkaynak, H. ; Burbank, B. ; Finkel, A. M. ; Cadena, F.

Argonne National Lab., IL. Energy and Environmental Systems Div.

Sponsor: Department of Energy, Washington, DC.

DE86014567/XAB

Report No.: CONF-860606-17

1986 22p

Air Pollution Control Association annual meeting and exhibition, Minneapolis, MN, USA, 22 Jun 1986.

Portions of this document are illegible in microfiche products.

Contract No.: W-31-109-ENG-38

The paper examines key model components and uncertainties generic to most quantitative methods used in assessing exposure risks to toxic substances disposed of in landfills. The analysis is based on the framework proposed by EPA for deriving screenings levels for certain dioxin or solvent containing hazardous wastes. (ERA citation 11:052040) (NTIS)

Criteria for Identifying Areas of Vulnerable Hydrogeology under the Resource Conservation and Recovery Act. Appendix D. Development of Vulnerability Criteria Based on Risk Assessments and Theoretical Modeling.

Anon

NTIS/PB86-224995

Govt Reports Announcements & Index (GRA&I), Issue 22, 1986

Appendix D identifies the three routes of exposure to contaminated ground water. It includes analysis of the theoretical considerations affecting plume concentration, discharge, plume size, and TOT. Case studies are used to illustrate the three exposure pathways and to illustrate risk assessment methods. Interim rept. (Final). See also PB86-224987. (NLM)

Exposure and risk assessment of toxic waste in a multimedia context

McKone TE ; Layton DW

Proc. - APCA Annu. Meet.; VOL 79th, ISS Vol. 1, 1986,86/12.1, 16 pp.

Toxic waste exposure risk assessment, Modeling toxic waste risk assessment;Organic compounds Wastes contg., exposure to, risk assessment of, model for;Process simulation Of transport and transformation, of toxic components of wastes Physicochemical;Wastes Exposure to, risk assessment of, model for Toxic (NLM)

Indigenous mammals as indicators of environmental pollution and potential health risk at chemical waste dumps
Charters DW ; Christian JJ
Hazard Assess. Chem.; VOL 5,, 1987,171-97
Review mammal indicator environmental pollution Health risk assessment chem review Indigenous mammal pollution indicator review;Environmental pollution Chem. waste dumps in, health risk assessment of, indigenous mammals in;Health hazard Of chem. waste sites, assessment of, indigenous mammals as indicators of;Mammal As indicator of environmental pollution at chem. waste sites;Wastes Health risk assessment of, indigenous mammals in, environmental pollution in relation to Chem. (NLM)

PROBLEMS AND RESPONSIBILITIES ASSOCIATED WITH HAZARDOUS WASTE AT THE STATE LEVEL,
HESSE JOHN L. ; RUDOLPH RICHARD ; RECTOR DELBERT
MICHIGAN DEPT PUBLIC HEALTH,
J ENV HEALTH, JAN-FEB 86, V48, N4, P186(4)
JOURNAL ARTICLE THE STATE OF MICHIGAN HAS BEEN VERY ACTIVE IN IDENTIFYING, EVALUATING, AND RESOLVING HAZARDOUS WASTE MANAGEMENT PROBLEMS. THE STATE'S 1982 ENV. RESPONSE ACT PROVIDES A DISPOSAL SITE RANKING SYSTEM BASED ON RELATIVE RISK, AND A FUNDING MECHANISM TO ADDRESS NEEDED RESPONSE ACTIONS. A NINE-MEMBER SITE REVIEW BOARD MAKES THE FINAL DECISION TOWARD DENIAL OR APPROVAL OF NEW SITES. OTHER RELATED PROGRAMS ARE CURRENTLY MONITORING PUBLIC AND PRIVATE DRINKING WATER SUPPLIES AND FOCUSING ON RISK ASSESSMENT AND HEALTH STUDIES. (ENVL)

Risk Assessment and Ranking Methodologies for Hazardous Chemical Defense Waste: A State-of-the-ART Review and Evaluation. Task 1 Report.
Chu MSY ; Rodricks JV ; St. Hilaire C ; Bras RL
NTIS/DE86013281
Department of Energy, Washington, DC.
Govt Reports Announcements & Index (GRA&I), Issue 26, 1986
This report summarizes the work performed under Task 1 of the Risk Assessment Evaluation Task under the Hazardous Chemical Defense Waste Management Program of the Department of Energy (DOE). The objective of Task 1 was to identify, review, and evaluate the state-of-the-art tools and techniques available for ranking and evaluating disposal facilities. (NLM)

RISK ASSESSMENT: ENGINEERING TOOL
Tusa W
Civil Engineering/ASCE 56(2):59-61; 1986.
The large growth in the hazardous waste market has led civil

engineers to use risk assessment as a tool to determine the approximate level of remedial action needed at hazardous waste sites and to determine an engineering design that will control the release of hazardous materials. The risk assessment begins by defining the sources of the contaminant and identifying the migration path and rate. The receptors of the contaminants are identified and the health risks are determined. The final steps involve deciding acceptable levels of exposure to the contaminants and identifying and evaluating appropriate technologies for remedial action and future control of the site. There are problems associated with each of the steps and improvements are suggested to make the risk assessment procedure even more valuable. (NLM)

Safety Assessment of Alternatives to Shallow Land Burial of Low Level Radioactive Waste. Volume 1. Failure Analysis of Engineered Barriers

Otis, M. D.

EG and G Idaho, Inc., Idaho Falls.

Sponsor: Nuclear Regulatory Commission, Washington, DC. Office of Nuclear Regulatory Research.; Department of Energy, Washington, DC.

NUREG/CR-4701/XAB

Report No : EGG-2465

Aug 86 70p

Sponsored by Nuclear Regulatory Commission, Washington, DC. Office of Nuclear Regulatory Research, and Department of Energy, Washington, DC.

Contract No.: DE-AC07-76ID01570

The need for new disposal capacity for Low Level radioactive Waste (LLW) has led to a re-examination of disposal practices. A number of enhancements and alternatives to traditional shallow land burial have been proposed to meet the need for new capacity and to address various concerns about the performance history of existing commercial LLW sites. There are five major alternative near surface disposal concepts: Above GroundVaults (AGV), Earth Mounded Concrete Bunker tumuli (EMCB), Below Ground Vaults (BGV), Augered Hole (AH) shaft disposal, and mined cavities. (NTIS)

SAMPLING THE OCEANS FOR POLLUTION: A RISK ASSESSMENT APPROACH TO EVALUATING LOW-LEVEL RADIOACTIVE WASTE DISPOSAL AT SEA,

PRAGER JAN C. ; BIERMAN VICTOR J. ; PAUL JOHN F. ; BONNER JAMES S.

EPA, RI,

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS REPORT, MAY-JUN 86, V6, N3, P2(25)

JOURNAL ARTICLE THE EPA OFFICE OF RADIATION PROGRAMS IS CONSIDERING ADOPTING A HAZARD ASSESSMENT APPROACH TO EVALUATING ANY PERMIT REQUESTS FOR DISPOSAL OF LOW-LEVEL RADIOACTIVE

WASTES AT SEA. THIS INVOLVES DEVELOPING EVALUATION PROTOCOLS TO GUIDE THE LICENSING PROCESS. COMPONENTS OF THE HAZARD ASSESSMENT PROCESS ARE DELINEATED, INCLUDING SITE CHARACTERIZATION, WASTE CHARACTERIZATION, EXPOSURE ASSESSMENT, AND EFFECTS ASSESSMENT. THE APPLICATION OF THIS ANALYTICAL SCHEME TO MARINE DISPOSAL OF RADIOACTIVE WASTES IS EXPLORED. RECOMMENDATIONS COVER DECISION TREE APPLICATION, COMPUTERIZED DATA STORAGE AND RETRIEVAL, AND INTERACTIVE COMPUTERIZED PERMITTING AND MONITORING. (ENVL)

Systemstudie Andere Entsorgungstechniken. Abschlussbericht. Technischer Anhang 5. Technisches Konzept und Sicherheitsanalyse des Transports von Endlargergebinden mit abgebrannten Brennelementen (Systems Study 'Alternative Entsorgung'. Final Report. Technical Annex 5. Technical Concept and Safety Analysis of the Transport of Ultimate Storage Compounds Including Spent Fuel Elements)

Schneider, K. ; Jobst, C. ; Bergmann, W. ; Hilbert, F.

Transnuklear G.m.b.H., Hanau (Germany, F.R.).

Sponsor: Nuklear-Chemie und -Metallurgie G.m.b.H., Hanau (Germany, F.R.). ; Kernforschungszentrum Karlsruhe G.m.b.H. (Germany, F.R.).

TIB/B86-09321/XAB

1984 245p

Text in German. See also TIB/B86-09320. Prepared in cooperation with Nuklear-Chemie und -Metallurgie G.m.b.H., Hanau (Germany, F.R.), and Kernforschungszentrum Karlsruhe G.m.b.H. (Germany, F.R.).

Languages: German

Country of Publication: Germany, Federal Republic of

Within the framework of specialized R and D work on alternative proceeding in waste management, a safety analysis was carried out for waste transportation in the fuel cycle. The annual collective dose risk due to transportation accidents in railroad transportation is assessed on the basis of the probabilistic risk analysis. A detailed cask concept is presented for the transportation of conditioned fuel elements. The collective radiation exposure of the relevant population classes caused by trouble-free transportation is calculated. The results of analyses of accident and normal operation are compared and summarized. (Copyright (c) 1986 by FIZ. Citation no.86:09321.) (NTIS)

Systemstudie Andere Entsorgungstechniken. Abschlussbericht. Technischer Anhang 22. Bewertungsverfahren (Systems Study 'Alternative Entsorgung'. Final Report. Technical Annex 22. Evaluating Methods)

Jansen, P. J. ; Oszuszky, F. ; Pechacek, F. ; Szeless, A.

Technische Univ., Vienna (Austria). Inst. fuer Energiewirtschaft.

Sponsor: Oesterreichische Elektrizitaetswirtschafts A.G., Vienna.; Kernforschungszentrum Karlsruhe G.m.b.H. (Germany,

F.R.).
TIB/B86-09326/XAB
1983 145p
Text in German. See also TIB/B86-09325. Prepared in cooperation with Oesterreichische Elektrizitaetswirtschafts A.G., Vienna, and Kernforschungszentrum Karlsruhe G.m.b.H. (Germany, F.R.).
Languages: German
Country of Publication: Germany, Federal Republic of
The actual overall evaluation of the two waste management options must obviously take place taking into account two aspects: (A) estimate of the significance of different level natural uranium consumption/economic efficiency; (B) estimate of different level actually resulting collective dose equivalents (environmental compatibility). Considerations of international and social acceptance are unlikely to provide any significant contribution for an evaluation. Speculations of this kind are by no means confirmed. Therefore, the implementation of a panel has been suggested to act as central authority for the evaluation of waste management options comprising persons having different attitudes towards nuclear energy. Talks are necessary to determine what is felt to be significant for good reasons. Reducing the complex nature of the decision-making problem from a multitude of evaluation aspects to a few important ones is possible but in dialogue. Only in dialogue can the significant aspects of evaluation be weighed against each other and a compromise, a joint judgement on waste management be achieved. The authors call this kind of dialogue formalized, because it can be supported in many ways by analyses. (Copyright (c) 1986 by FIZ. Citation no.86:09326.)
(NTIS)

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RADIATION

Aerial Radiological Survey of the H.B. Robinson Steam Electric Plant and Surrounding Area, Hartsville, South Carolina. Date of Survey: June 1985
EG and G, Inc., Las Vegas, NV. Remote Sensing Lab.
Sponsor: Department of Energy, Washington, DC.
DE86013952/XAB
Report No.: EGG-10282-1100
Apr 86 20p
Portions of this document are illegible in microfiche products. Original copy available until stock is exhausted.
Contract No.: AC08-83NV10282
The survey covered a 64-square-kilometer (25-square-mile) area centered on the Plant. The highest radiation exposure rates, up to a maximum of 220 microroentgens per hour (mu R/h), were inferred from the data measured directly over the

Plant. This detected radiation was due to the presence of cobalt-58, cobalt-60, and cesium-137, which was consistent with normal Plant operations. A single offsite anomaly was detected within the survey area this anomaly, which was approximately 1.3 kilometers (0.8 miles) northwest of the Plant, was the site of the Plant's coal-fired generating station's ash settling pond. (NTIS)

Energetics of Smelt/Water Explosions
(Technical rept. Jul 84-Jul 86)
Grace, T. M. ; Robinson, R. R.
Institute of Paper Chemistry, Appleton, WI.
Sponsor: IIT Research Inst., Chicago, IL.; Nuclear Regulatory Commission, Washington, DC. Office of Nuclear Regulatory Research.
NUREG/CR-4745/XAB
Oct 86 280p
Prepared in cooperation with IIT Research Inst., Chicago, IL. Sponsored by Nuclear Regulatory Commission, Washington, DC. Office of Nuclear Regulatory Research.
Contract No.: NRC-G-04-84-009
The question of how to scale data on steam explosions from laboratory tests has been raised in the course of several risk assessment studies of severe nuclear reactor accidents. Analysis of smelt-water explosions at kraft pulp mills may provide some answers in this regard because the scale of structures involved and the volumes of water and smelt (fuel) are roughly on the same order of magnitude as those encountered in nuclear reactors. The purpose of this work was to obtain data on the energy conversion efficiency (thermal to mechanical) of steam explosions in large scale systems by analysis of smelt-water explosions in kraft paper pulp mill recovery boilers and dissolving tanks. (NTIS)

Proceedings of the Workshop on Containment Integrity (3rd)
Cochrell, R. ; Molina, T.
Sandia National Labs., Albuquerque, NM.
Sponsor: Nuclear Regulatory Commission, Washington, DC. Office of Nuclear Regulatory Research.; Department of Energy, Washington, DC.
NUREG/CP-0076/XAB
Report No.: SAND-86-0618
Jul 86 566p
Sponsored by Nuclear Regulatory Commission, Washington, DC. Office of Nuclear Regulatory Research, and Department of Energy, Washington, DC.
Contract No.: DE-AC04-76DP00789
The Workshop was held in Washington, DC, on May 21-23, 1986. The behavior of containments during severe accidents was of primary interest to the over 140 participants. Sessions were held on (A) Containment Integrity as a Part of Risk Assessment, (B) Operational Experience and Its Relationship to Containment

Performance During Accident Conditions, (C) Containment Environment and Loading Conditions During Severe Accidents, (D) Analysis/Testing of Containment Systems, Part 1, and (F) Analysis/Testing of Containment Systems, Part II. (NTIS)

Radon Detection in Homes and Buildings. 1970-October 1986 (Citations from the NTIS Database)
(Rept. for 1970-Oct 86)
National Technical Information Service, Springfield, VA.
PB87-850038/XAB
Nov 86 51p
This bibliography contains citations concerning the detection of radon and radon daughter gases in homes and buildings. Measurement techniques and equipment, the effect of local geology on radon in a building, the effect of home weatherization measures on radon levels, and sources of radon entering buildings are among the topics discussed. Residential and non-residential buildings are examined. Risk assessment and ways to control the amount of radon in a building are briefly considered. (Contains 86 citations fully indexed and including a title list.) (NTIS)

Reactor Safety Research Semiannual Report, July - December 1985. Volume 34
(Technical rept)
Sandia National Labs., Albuquerque, NM.
Sponsor: Nuclear Regulatory Commission, Washington, DC. Office of Nuclear Regulatory Research.; Department of Energy, Washington, DC.
NUREG/CR-4340-V2/XAB
Report No.: SAND-85-1606-VOL-2
Jul 86 326p
See also NUREG/CR-4340-V1. Sponsored by Nuclear Regulatory Commission, Washington, DC. Office of Nuclear Regulatory Research, and Department of Energy, Washington, DC.
Contract No.: DE-AC04-76DP00789
Sandia National Laboratories is conducting, under USNRC sponsorship, phenomenological research related to the safety of commercial nuclear power reactors. The research includes experiments to simulate the phenomenology of the accident conditions and the development of analytical models, verified by experiment, which can be used to predict reactor and safety systems performance and behavior under abnormal conditions. The objective of the work is to provide NRC requisite data bases and analytical methods to (1) identify and define safety issues, (2) understand the progression of risk-significant accident sequences, and (3) conduct safety assessments. The collective NRC-sponsored effort at Sandia National Laboratories is directed at enhancing the technology base supporting licensing decisions. (NTIS)

A reconsideration of cells at risk and other key factors in radon daughter dosimetry
James AC
Natl. Radiol. Prot. Board, Chilton/Didcot/Oxfordshire
ACS Symp. Ser.; VOL 331, ISS Radon Its Decay Prod., 1987,400-18
Radon daughter dosimetry bronchial cell Lung cancer radon dose assessment Review radon daughter dosimetry lung;Air pollution By radon daughters, lung exposure to, dosimetry of, model for, bronchial cells at risk in relation to;Bronchi Cells of, radon daughter exposure hazard to, lung exposure dosimetry in relation to;Dosimetry Of radon daughters, model for, lung health risk assessment in relation to;Process simulation For radon daughter dosimetry for lung exposure, bronchial cells at risk i relation to Biological (NLM)

Risk assessment of alternative spent-fuel storage technologies
Facchini A ; De Servi U ; Dworschak H ; Hunt BA ; Tominez M ; Volta G
Politec. Milano, Milan
Energ. Nucl. (Rome); VOL 3, ISS 2, 1986,65-77
Spent fuel storage technol risk Radioactive waste spent fuel storage Safety spent fuel storage;Earthquake Risk assessment of nuclear reactor spent fuel storage technologies in relation to;Nuclear reactor fuels and fuel elements Risk assessment of alternative storage technol. for Spent;Radioactive wastes Risk assessment of storage technologies for Spent fuel (NLM)

Science and trans-science in radiation risk assessment: Child cancer around the nuclear fuel reprocessing plant at Sellafield, UK.
CROUCH D
Sci. Policy Res. Unit, Univ. Sussex, Falmer, Brighton BN1 9RF, UK.
SCI TOTAL ENVIRON; 53 (3). 1986. 201-216.
The assessment of health risks to the population from radionuclides in the environment is a complex and as yet incomplete science: biogeochemical mechanisms of environmental transfer and concentration are poorly understood; models of radionuclide metabolism rely largely on inconclusive and contradictory experiments with animals, and the principles by which results may be extrapolated to humans are unknown; uncertainties in the dosimetry of alpha-emitters in children and the foetus are acute; and chronic doubt persists over the magnitude of low-level dose-response for radiation carcinogenesis. To deny uncertainties of this nature is to court public distrust of scientific risk assessment; public confidence in nuclear power technologies might be strengthened through a

more open discussion of the technical difficulties involved. These problems are described with reference to the assessment of cancer risks at a large nuclear facility in the north of England. The extent of uncertainties in a recent radiological risk assessment are found to be such that, should scientific concern persist over the exceptional incidence of child cancer in the locality, greater consideration should be given to a reappraisal of the risk calculation. (NLM)

Smart approach to level-1 probabilistic risk assessment
Harper, F.T.; Camp, A.L.
SNL
American Nuclear Society Winter Meeting 8640330 Washington, DC (USA) 16-20 Nov 1986
American Nuclear Society (ANS)
American Nuclear Society, 555 N. Kensington Avenue, La Grange Park, IL 60525 (USA). Telephone: (312) 352-6611, Conference abstracts will be published in Volume 53 of ANS Transactions. Price: Prepaid $100.00 (U.S.); $116.00 (overseas) (CPI)

Use of the Food-Chain Model FOOD III and the Soil Model SCEMR to Assess Irrigation as a Biosphere Pathway.
Govt Reports Announcements & Index (GRA&I), Issue 04, 1987
Sheppard SC
Atomic Energy of Canada Ltd., Pinawa (Manitoba). Whiteshell Nuclear Research Establishment.
NTIS/DE85900459, U.S. Sales Only., 36p
Irrigation of contaminated water onto crop land is a relatively direct pathway for radionuclides to deliver a radiation dose to man. Irrigation was not originally included in the SYVAC assesmsnet model for the Precambrian Shield because no irrigation is currently practiced in the region. This report re-evaluates this decision. An analysis of meteorological data shows that crop yield in northern Ontario would benefit from irrigation. Thus, incentives are present for subsistence-scale, and perhaps commercial-scale, irrigation of surface or well water. A food-chain analysis indicated that irrigation with contaminated water could deliver a dose comparable to direct consumption (drinking) of the same water, for some radionuclides. Long-term contamination of soil through irrigation was predicted to be a substantial hazard, even when soil leaching was incorporated into the food-chain model. This report presents parameter estimates that could be used to incorporate irrigation as a pathway in the SYVAC code and will constitute the basis for further decisions concerning this pathway. (ERA citation 11:030579) Work performed under Canada/US Waste Management Information Exchange Agreement. (NLM)

Effects of Toxic Pollutants on Aquatic Resources Using Statistical Models and Techniques to Extrapolate Acute and Chronic Effects Benchmarks

Linder, E. ; Patil, G. P. ; Suter, G. W. ; Taillie, C.

Pennsylvania State Univ., University Park. Center for Statistical Ecology and Environmental Statistics.

Sponsor: Oak Ridge National Lab., TN. Environmental Sciences Div.; Department of Energy, Washington, DC.

DE86014639/XAB

Report No.: CONF-860983-2

1986 5p

Oceans '86, Washington, DC, USA, 23 Sep 1986.

Portions of this document are illegible in microfiche products.

Contract No.: AC05-84OR21400

Data extrapolations are required to assess the effects of toxic pollutants on aquatic resources. We present a procedure that uses maximum likelihood methods of estimating a functional linear relationship for extrapolation. Optimal estimates for the variance of the extrapolation parameters as well as the fitted values do not exist. We propose several alternative variance estimates which are used for computations of the extrapolated chronic benchmark and its distribution. Improved estimates can be obtained by applying computer-intensive resampling methods. (ERA citation 11:052085) (NTIS)

QUANTITATIVE STRUCTURE-ACTIVITY RELATIONSHIPS IN AQUATIC TOXICOLOGY,

HERMENS JOOP L.

UNIV OF UTRECHT, NETHERLANDS,

PESTICIDE SCIENCE, 1986, V17, P287(10)

JOURNAL ARTICLE KNOWLEDGE OF QUANTITATIVE STRUCTURE-ACTIVITY RELATIONSHIPS (QSAR) ENABLES THE TOXICITY OF AQUATIC POLLUTANTS TO BE PREDICTED FROM THEIR PHYSICOCHEMICAL PROPERTIES. SEVERAL TECHNIQUES THAT CAN BE USED TO OBTAINS QSARS ARE REVIEWED, AND EXAMPLES OF QSAR STUDIES ARE PRESENTED FOR SOME IMPORTANT GROUPS OF AQUATIC POLLUTANTS. REACTIVE ORGANIC HALIDES, PHENOLS, ANILINES, AND SOME RELATIVELY UNREACTIVE, NONIONIZED COMPOUNDS ARE ALSO DISCUSSED. THE OPPORTUNITY FOR APPLYING PREDICTED TOXICITIES IN ENVIRONMENTAL HAZARD ASSESSMENT IS EXPLORED. (ENVL)

POLICY

EPIDEMIOLOGY IN RISK ASSESSMENT FOR REGULATORY POLICY
WHITTEMORE AS
J CHRONIC DIS; 39 (12). 1986 (RECD. 1987). 1157-1168. (NLM)

Risk assessment in environmental policy-making.
Russell M ; Gruber M
U.S. Environmental Protection Agency, Washington, DC 20460.
Science; VOL 236, ISS 4799, 1987, P286-90
Environmental policy-making has become more dependent on formal, quantitative risk assessment because of increasing attention to the prevention of human health damage from toxic chemicals. Risk assessment helps set priorities for regulation of the very large numbers of chemicals that are of potential concern and helps direct limited social and government resources against the most significant risks. Although the scientific basis for risk assessment is often uncertain and the public and its representatives have often been confused by its use in regulatory decisions, the U.S. Environmental Protection Agency currently uses a variety of risk assessment techniques to set priorities, tailor regulations, and make decisions at particular sites. The Environmental Protection Agency also attempts to make the practice of risk assessment more consistent throughout the agency and to improve public understanding of the meaning of risk assessment and risk management. (NLM)

The Perils of Prudence: How Conservative Risk Assessments Distort Regulation
Nichols, Albert L.; Zeckhauser, Richard J.
Regulation v10n2 PP: 13-24 Nov/Dec 1986

In setting health and safety regulations, government agencies commonly rely on assumptions that give high estimates of risk -- a prudent and conservative approach. Overestimates of health risks, however, result in more stringent and costly regulation. Some low-level risks are regulated too stringently while more severe risks are allowed to be underregulated. Quantitative risk assessment attempts to determine whether a substance poses a hazard and if so, the magnitude of the risk. Risk management involves the development of policies to control those risks. While these 2 activities should be separated, in reality, the line between them is often blurred. An alternative to the conservative or upper-bound assessmentapproach is to report a range of risk estimates. Scientists should estimate how likely it is that any particular risk estimate is correct, and policy decisions about health risk should be based upon the expected value or mean

estimate of the risk, not the upper bound. The expected-value approach should be viewed as a goal for long-range reform. References. (ABI)

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BIBLIOGRAPHIES AND OTHER SOURCES .... this section highlights a variety of documents, including bibliographies, serial publications, directories, special subject collections, indexes, etc. These sources lead to information and data on specific chemicals and chemical groups as well as many of the intricate components of risk assessment including exposure, fate, toxicity, chemical safety and handling, physical and chemical properties, standards and regulations, manufacturing and use, etc.

Course in environmental chemical hazard assessment
Dunnette, D.A.
American Chemical Society 192nd Meeting 8630396 Anaheim, CA (USA) 7-12 Sep 1986
American Chemical Society (ACS)
ACS Distribution Office, 210, 1155 16th Street, N.W., Washington, DC 20036 (USA). Telephone: (202) 872-4405, Contact specific authors of specific papers for copies of entire papers. ACS will publish a book of abstracts. Price: $34.00 (CPI)

RISK MANAGEMENT

.... DESCRIBES REGULATORY DECISION-MAKING PROCESSES TO CONTROL AND MANAGE RISK

GENERAL PERSPECTIVE .... includes decision-making, acceptable risk, risk-taking (psychology), multi-media approach, cross-media approach, applications, uncertainity, risk/benefit.

BHOPAL AFTERMATH REVIEW: AN ASSESSMENT OF THE CANADIAN SITUATION,
ENV CANADA ENV PROTECTION SERVICE REPORT, MAR 86 (252)
NON US GOVT REPORT IN LIGHT OF THE TRAGIC INDUSTRIAL ACCIDENT IN BHOPAL, INDIA, IN DECEMBER 1984, THE CANADIAN MINISTER OF THE ENV. AUTHORIZED AN ASSESSMENT OF THE ADEQUACY OF EXISTING MEASURES TO PREVENT AND RESPOND TO MAJOR INDUSTRIAL ACCIDENTS IN CANADA. SPILL POTENTIAL, PREVENTION MECHANISMS, AND RESPONSE PROTOCOLS ARE EVALUATED. USING THE HAZARD CRITERIA AS A BASIS FOR IDENTIFYING CHEMICALS OF IMPORTANCE, A SITE-SPECIFIC RISK ASSESSMENT SHOULD BE PERFORMED FOR EACH INDUSTRIAL PLANT TO DETERMINE POTENTIAL FOR A MAJOR INDUSTRIAL ACCIDENT. COMPANIES USING OR MANUFACTURING HAZARDOUS CHEMICALS IN CANADA SHOULD MINIMIZE INVENTORIES AND ENSURE THAT PERSONNEL ARE FULLY TRAINED ABOUT THE CHEMICALS HANDLED. OTHER RECOMMENDATIONS COVER SAFETY AUDITS, CONTINGENCY PLANNING, BUFFER ZONES, SPILL REPORTING AND ANALYSIS, AND EMERGENCY MEDICAL TREATMENT. (ENVL)

The chemical industry after Bhopal: an international symposium held in London, 7/8th November 1985.
Smith, M. A., ed.
('86) vi+318p, tables charts
ORDER INFO: IBC Technical Services Ltd., Bath House, 56 Holborn Viaduct, London, EC1A 2EX, Eng. (ISBN 0-907822-73-8) pa

Implication of the accident for plant safety, risk assessment, and emergency preparedness. Partial contents: Safety and the chemical industry in developing countries, by R. Sethuraman; Liability for products and the manufacturing process, by J. G. Trotter; The problems of insuring hazardous operations after Bhopal, by M. L. Tobin. (PAIS)

Decision and Risk Analysis
Moskowitz, Herbert; Bunn, Derek
European Jrnl of Operational Research (Netherlands) v28n3
PP: 247-260 Mar 1987

In reviewing current trends in decision and risk analysis, an emphasis is set on different modeling approaches and the way that the structure of analysis is changing. The focus is as much on implementation as analytical issues, and particular attention also is given to questions of public-sector risk evaluation and management. Trends in research are explored within the standard decision analysis model of formulation, assessment, and optimization, although it is acknowledged that this framework itself is a subject of research and change. The development of the personal computer and suitable interactive software increasingly will stimulate the application of its concepts and methods to real decision-making problems in both the private and public sectors. Tables. Diagrams. References. (ABI)

INTERNATIONAL TOXICITY UPDATE,
DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS REPORT,
MAY-JUN 86, V6, N3, P27(10)
JOURNAL ARTICLE RECENT ADVANCES IN THE CONTROL OF TOXIC SUBSTANCES WORLDWIDE ARE SURVEYED. THE INDUSTRIAL TOXICOLOGY RESEARCH CENTRE OF INDIA HAS UNDERTAKEN A PROGRAM OF COMPILING SUBJECT BIBLIOGRAPHIES ON VARIOUS TOPICS OF INDUSTRIAL AND ENVIRONMENTAL TOXICOLOGY. A SCORING SYSTEM HAS BEEN DEVELOPED IN THE NETHERLANDS FOR SETTING PRIORITIES IN INDUSTRIAL CHEMICALS HAZARD ASSESSMENT. THE USE, FATE, DISPOSAL, AND ENVIRONMENTAL SIGNIFICANCE OF PCBS ARE EXAMINED, AND DIRECTIVES FOR THE MANAGEMENT OF THIS CHEMICAL WITHIN THE OECD ARE DISCUSSED. DEVELOPMENTS PERTAINING TO THE REGULATION OF ASBESTOS IN THE U.K., LINDANE IN THE U.S., AND BENZOYL PEROXIDE IN IRELAND ARE ALSO COVERED. (ENVL)

A New Understanding of Risk Management
Berlonghi, Alexander; Mattman, Jurg W.
Risk Mgmt v34n4 PP: 54-60 Apr 1987

A reexamination of the understanding of risk is required in order to become more effective in coordinating all the actions of the various professionals involved in the management of risk. At first, the risk manager's job was one of assuring the best protection and insurance coverage possible for the organization, then, the risk manager became responsible for saving money by reducing overall costs. A new trend of risk management today focuses on management and

analytical techniques in risk assessment. Three fundamental assumptions about risk management must be addressed. First, it is assumed that risk exists independent of someone talking about risk. However, risk is not an objective reality. Second, it has been taken for granted that risk managers are managing risk; however, risk managers manage the conversations and commitments of various people in such a way that all those conversations and commitments are protected and allowed to be fulfilled. Third, the view that the role of the risk manager has not been established is sometimes an excuse for not developing more competence. (ABI)

Risk Management: Weighing the Pros and Cons
McKay, Richard S.
Inform v1n1 pp: 16-18 Jan 1987

Understanding risk and the ways risk affects an organization's decision-making approach is vital. Risk management consists of the identification, analysis, and evaluation of risk and the selection of methods that are most advantageous for treating it. The elements of risk management are: 1. risk assessment, which is broken down into risk estimation and risk identification, and 2. risk evaluation, consisting of risk aversion and risk acceptance. The federal government is mandating the use of risk analysis in automatic data processing (ADP) as a tool to help allocate and protect limited resources. An important requirement for incorporating risk analysis as a routine management tool for federal ADP security is an awareness that the proper use of risk analysis helps ensure that the organization's mission is not compromised. Risk analysis is a structured method of feedback on a company's processes and should be conducted in order to reduce risk rather than to place blame. Diagrams. References. (ABI)

WARNING SYSTEMS IN RISK MANAGEMENT,
PATE-CORNELL M. E.
STANFORD UNIV,
RISK ANALYSIS, 1986, V6, N2, P223(12)
JOURNAL ARTICLE A METHOD IS INTRODUCED THAT ALLOWS PROBABILISTIC EVALUATION AND OPTIMIZATION OF WARNING SYSTEMS, AND COMPARISON OF THEIR PERFORMANCE AND COST-EFFECTIVENESS WITH THOSE OF OTHER MEANS OF RISK MANAGEMENT. THE METHOD OF STOCHASTIC ANALYSIS OF COSTS AND BENEFITS OF A WARNING SYSTEM IS PROPOSED AS A FUNCTION OF THE QUALITY OF THE SIGNALS ISSUED, AND OF THE RESPONSE OF THE PEOPLE TO WHOM WARNINGS ARE DIRECTED. THE TRADE-OFF BETWEEN THE RATE OF FALSE ALERTS AND THE LENGTH OF LEAD TIME IS STUDIED TO ACCOUNT FOR THE LONG-TERM EFFECTS OF CRYING WOLF AND THE EFFECTIVENESS OF EMERGENCY ACTIONS. (ENVL)

POLICY .... includes federal, state and local policy, science, public and regulatory policy.

Atomic level modeling of the chemical and tribological properties
Goddard, W.A.,III
California Inst. Technol., Pasadena, CA
ASLE 1987 Annual Meeting 8720081 Anaheim, CA (USA) 11-14 May 1987 American Society of Lubrication Engineers (ASLE)
ASLE, 838 Busse Highway, Park Ridge, IL 60068 (USA). Telephone: (312) 825-5536, Price: $60.00 (ASLE members); $80.00 (non-members) (CPI)

Chemical Notification Laws in the OECD Member Countries
Arup, Christopher
Jrnl of World Trade Law (UK) v21n1 PP: 47-66 Feb 1987
AVAILABILITY: Journal of World Trade Law, 10 Hill View Rd., Twickenham, Middlesex, England TW1 1EB

In many Organization for Economic Cooperation & Development (OECD) countries, the screening of chemical products is extending to the premarketing notification of the basic chemicals themselves. A key OECD resolution was the 1977 Recommendation concerning procedures and requirements for anticipating the effects of chemicals on humans and the environment. Administrative requirements demand that manufacturers and importers: 1. maintain the results of assessments of the effects of a chemical, 2. notify authorities of all new chemical substances, and 3. submit a dossier for the chemical under investigation. A 2-step initial hazard assessment procedure determines the potential human and environmental effects. Guidelines are given for the type of information that should be disseminated when a chemical is transferred along the commercial chain. The OECD in 1981 accepted the Decision Concerning the Mutual Acceptance of Data in the Assessment of Chemicals. The program is a good source of principles for organizing a new screening system. References. (ABI)

Risk management today: a how-to guide for local government. (book reviews)
Counts, Lajuana M.
Urban Lawyer 19 n1 185-186 Wntr 1987 (LRI)

The role of Congress in risk management. (includes panel discussion) (Standing Committee Symposium on Risk Management)
Green, Harold P.; Freeman, George; Doniger, David D.; Cummings, Philip T.; Reed, Phillip D.
Environmental Law Reporter 16 n8 10220-10224 Aug 1986 (LRI)

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CHEMICAL SPECIFIC RISK MANAGEMENT

ASBESTOS

Air Force Asbestos Guidance for Rating and Assessing Damage and Exposure (GRADE)
(Final rept.)
Pazyra, L. P.
Air Force Occupational and Environmental Health Lab., Brooks AFB, TX.
AD-A174 875/5/XAB
Report No.: OEHL-86-072EH0021HGA
Aug 86 69p
The Asbestos GRADE system is based upon the asbestos risk assessment and abatement prioritization system developed by Versar, Inc. of Springfield VA. The method provides a means by which the Air Force, Command, or base officials may prioritize asbestos abatement for sprayed-on, trowelled-on, or damaged friable asbestos-containing material (ACM). Also, included are recommended survey and bulk sampling procedures, a rating and scoring checklist with individual factor definitions, recommended Rating vs Priority follow-up actions, and 15 examples on the use of the rating and scoring checklist. (NTIS)

ASBESTOS HAZARD MANAGEMENT,
OULLETTE ROBERT P. ; CHEREMISINOFF PAUL N.
(VERSAR INC, VA) AND ; (NEW JERSEY INST TECHNOLOGY)
POLLUTION ENGINEERING, MAR 87, V19, N3, P36(8)
JOURNAL ARTICLE ASBESTOS AND ITS HAZARDS HAVE PROMPTED CONSIDERABLE PUBLIC CONCERN IN RECENT YEARS. BUILDING OWNERS, SCHOOL ADMINISTRATORS, AND GOVERNMENT AGENCIES HAVE BEEN BURDENED WITH THE RESPONSIBILITY OF INVESTIGATING POTENTIAL ASBESTOS HAZARDS. REGULATIONS AND THE LEGAL RAMIFICATIONS ASSOCIATED WITH ASBESTOS EXPOSURE HAVE PROVIDED LIMITED GUIDANCE FOR ADDRESSING THIS PROBLEM. HAZARD, RISK, AND EXPOSURE ARE IDENTIFIED AS THEY RELATE TO ASBESTOS HAZARD MANAGEMENT, AND CORRECTION PROCEDURES ARE OUTLINED. (ENVL)

DIOXIN

DIOXINS IN CANADA: DECIDING THE PUBLIC HEALTH RISK,
MORRISON A. B.
HEALTH & WELFARE CANADA,
DIOXINS IN THE ENV (HEMISPHERE) REPORT, 1985, P39(10)
BOOK CANADIAN NATIONAL CRITERIA FOR DIOXIN EMISSIONS IN AIR HAVE NOT YET BEEN DEVELOPED UNDER THE CLEAN AIR ACT, ALTHOUGH AUTHORITY TO DO SO EXISTS. RECENT CANADIAN CONCERNS ABOUT THE DIOXIN PROBLEM STEM FROM MOUNTING EVIDENCE OF WIDESPREAD ENVIRONMENTAL CONTAMINATION AND ADVERSE EFFECTS ON HUMANS. ESTIMATES OF DIOXIN RELEASES ANNUALLY TO THE CANADIAN ENVIRONMENT FROM CHEMICAL USAGE, WASTE DUMPS, AND COMBUSTION ARE REPORTED. PROBLEMS INHERENT IN RISK ASSESSMENT ARE CITED, AND THE FEDERAL APPROACH TO MANAGEMENT OF DIOXINS IS OUTLINED. REGULATIONS NOW GOVERN THE MANUFACTURE OF DIOXINS IN CANADA, AS WELL AS RELATED DISPOSAL OF WASTES, REGISTRATION, COMBUSTION, AND MONITORING OF FOODS. (ENVL)

POLYCHLORINATED BIPHENYLS

PCB risk management for institutional electric distribution systems
Hansen, W.G.
Tetratech Inc., Bellevue, WA, USA
International MONTECH '86 Conference 8635044 Montreal, Quebec (Canada) 29 Sep-3 Oct 1986
Institute of Electrical and Electronics Engineers (IEEE)
IEEE Service Center, Publication Sales Department, 445 Hoes Lane, Piscataway, NJ 08854 (USA) (CPI)

RADIATION

Biological basis of radiological protection and its application to risk assessment. Proceedings of a one-day seminar. Bristol, April 11, 1986.
Br J Radiol; VOL 60, ISS 709, 1987, P1-50 (NLM)

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ECONOMIC ANALYSIS .... includes cost/benefit, cost/effectiveness.

The dangers of caution: conservatism in assessment and the mismanagement of risk.
Nichols, Albert L. and Richard J. Zeckhauser.
bibl
In: Advances in applied micro-economics, 1986
p 55-82 '86
Focuses on carcinogens; analysis of the debate about the EPA's recently tightened limits on lead in gasoline. (PAIS)

Environmental Law: An Emerging Threat to Financial Institutions
Shumate, Jack D.
Bank Administration v63n2 PP: 44-46 Feb 1987

In lending to businesses that may produce or become involved with toxic waste, banks risk running into problems with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, or the "Superfund." In seeking contribution by those liable, the Environmental Protection Agency can choose to go after anyone participating in the management of the facility. Superfund is intended to protect mortgagees, but secured creditors seeking to protect their interests sometimes have acted to influence company management decisions in ways that removed that protection. To avoid liability, even innocent owners, such as foreclosers, who takes title after contamination must show they had no reason to know of the problem. Other state and federal environmental regulations also may impose liability on lenders; lending officers themselves may be held accountable by litigious shareholders. This potential risk mandates rigorous attention to the nature and operation of a borrower's business. Special insurance may be required, but periodic independent audits are the best answer. (ABI)

CORPORATE RISK MANAGEMENT

Asbestos Problems: The Property Manager's Role
Loomis, Harwood W.
Journal of Property Mgmt v52n2 PP: 43-44,46 Mar/Apr 1987

The courts may consider it the property manager's duty to take reasonable precautions to assure that people in a building are not subjected to the hazard of asbestos. Building owners and managers should consider having their properties tested for asbestos if they were built between 1930 and 1976. An independent consultant can prepare a hazard assessment study if asbestos is found and often can recommend ways to allow asbestos to remain in the building, subject to periodic monitoring. Three options are available for abatement of asbestos: 1. enclosure, 2. encapsulation, and 3. removal. Owners and managers considering removal should be selective in choosing a contractor, ensuring that the company is properly trained, qualified, and licensed and that the work will be done in accordance with recognized standards. An independent consultant should monitor the job in progress and provide a posttest to verify the satisfactory removal of the asbestos. All pertinent records of removal should be maintained for at least 25 years. (ABI)

Chemicals Go to Captives for Coverage
Katzenberg, Daniel
Chemical Week v140n5 PP: 68,71 Feb 11, 1987

The "insurance crisis" is still very much a reality for many chemical companies, which have been labeled "high risk" and are still being refused liability coverage by most insurers. The problem is that insurers and reinsurers have not yet recovered from major losses in 1984-1985. More insurance is now available to chemical companies than was available a year ago, but that coverage is generally very expensive. Also, the insurance coverage often is insufficient to satisfy the chemical companies' insurance needs. The coverage continues to be provided on a claims-made basis, while "low-risk" companies are insured under occurrence policies. Chemical companies increasingly are turning to captive insurance companies, owned by the policyholders themselves. Three large new excess-coverage insurers have been formed in the last year: 1. American Casualty Excess Insurance Association, 2. XL Insurance, and 3. the American Excess Insurance Association. Some small chemical companies have formed their own captive insurance company as well. Tables. (ABI)

EIL Claims Call for Company Involvement
Bradford, Michael
Business Insurance v21n15 PP: 59 Apr 13, 1987

According to a panel of experts, a business faced with an environmental impairment liability (EIL) claim should get involved early in efforts to determine the extent of its exposure. At the 25th annual Risk & Insurance Management Society conference, speakers stressed the importance of taking an active role in managing EIL claims. Travelers Indemnity Co.'s Floyd H.Knowlton noted the importance of playing a role in the cleanup, rather than letting the government come up with a remedy. Robert Mason of the Environmental Protection Agency (EPA) explained that, when a company becomes actively involved, it has the opportunity to influence the type of remedy the EPA decides to enforce in a cleanup. Panel members agreed that hiring an outside consultant should be a consideration for a company facing an EIL claim. Attorney Howard P. Epstein identified several factors to consider when companies face an EIL claim: 1. whether in-house personnel could supply the technical needs, 2. consultant's experience, and 3. the cost of the consultant's services. (ABI)

EIL: Insurance Coverage Isn't Enough
Berkowitz, Joan B.
National Underwriter (Property/Casualty/Employee Benefits) v91n13 PP: 57-59,68 Mar 30, 1987

The risk management process is starting to be applied to environmental exposures. There was a retrenchment in the environmental impairment liability (EIL) market between 1983-1986 for several reasons, such as: 1. Premiums had been underpriced. 2. Insurance costs were low and interest rates were high, leading insurers to assume incorrectly that they could cover losses. 3. The market was skewed toward the high-risk side. In 1987, there are signs that the EIL market is returning. Self-insured groups are seeking members, including: 1. Hypercept TM, 2. North American Casualty Cooperative, and 3. Waste Insurance Liability Ltd. Government regulations to control environmental risks are proliferating. Liability is strict -- triggered by damages regardless of cause. The general trend in legislation and litigation is toward increasing responsibility for business and improved vigilance in enforcement. Historical data need to be analyzed to establish rate structures that reflect the risk being insured. (ABI)

Environmental Risk Management: A New Approach to Pollution Insurance

Merklein, Ernest A., Jr.

Corporate Accounting v5n2 PP: 7-9 Spring 1987

Due to unresolved legal, political, and social issues, many major insurers have discontinued their environmental impairment liability (EIL) insurance or have increased the premiums on it substantially. The lack of affordable EIL insurance threatens the financial solvency of the hazardous-waste industry and affects the commercial, manufacturing, and governmental sectors. Moreover, government regulatory agencies are imposing stricter financial penalties for pollution. Therefore, corporate risk managers must be able to evaluate their organizations' liability risks. This evaluation can be accomplished by using a comprehensive environmental risk-management program that consists of: 1. risk assessment performed by a team of scientists and engineers, 2. loss prevention, and 3. loss control. Next, a risk-financing method should be selected. The alternatives to traditional insurance include: 1. risk-retention groups or captive insurance companies, 2. combinations of risk retention and transfers, 3. risk transfers, and 4. various financial instruments. (ABI)

Excess and Surplus Lines -- EIL Insurance: Handle with Care

Metelski, John J.

Best's Review (Prop/Casualty) v87n11 PP: 54-58 Mar 1987

In the past, many environmental impairment liability (EIL) insurance programs failed because they entered the market for inappropriate reasons and broke many of the basic rules for success in underwriting a new coverage. However, the EIL area can be reentered successfully if the insurer follows the general principles of product development and specific techniques of environmental assessment and takes into account the pertinent environmental regulations. EIL, perhaps one of the most challenging underwriting efforts of the insurance industry, is a distinct mixture of exposures that can be related to property, casualty, and boiler and machinery exposures. The risk assessment of each insured site is central to a successful EIL program. This assessment must be a comprehensive scientific and engineering evaluation of the insured's operation and practices as well as the surrounding environment, among other things. Equally important to the EIL program is the ability to respond quickly to a pollution incident in the event of a claim. (ABI)

Labor Relations Update -- Risky Business: Creating a Safe Environment

Price, Dennis L.

Personnel v63n11 PP: 62-67 Nov 1986

The US justice system is increasingly putting responsibility for safety on management. The 2 important tests developed by the courts for determining management responsibility are foreseeability and prudence. Foreseeability requires managers to conduct studies that document the safety record of each company product and maintain records of similar products on the market. Inductive reasoning involves such techniques as job safety analysis, task analysis, preliminary hazard analysis, and energy/barrier analysis. It is reasonable to accept risks, but how reasonable a risk is depends partly on the probability or frequency of occurrence and the severity of the event. Actions that management can take to ensure an adequate safety program include: 1. Hire an adequately trained professional safety engineer. 2. Have management involved in decisions of acceptable risk. 3. Require documented analyses of hazards. Charts. (ABI)

Major Firms Move Beyond Compliance to Reduce Hazards

Baram, Michael

National Underwriter (Property/Casualty/Employee Benefits) v91n16 PP: 19-21 Apr 20, 1987

A new age is emerging for the chemical industry, as federal, state, and local agencies and community residents move to reduce chemical accident hazards. In response, some major firms are taking actions that go beyond mere compliance with the law in an effort to protect their own self-interests. Many companies are now carefully evaluating their activities, the chemicals they handle, and the safety measures they use, in order to: 1. ensure compliance with the reporting and disclosure provisions of the new laws and so avoid agency enforcement action and civil penalties, and 2. reduce the expected adverse implications of the new disclosure requirements. To meet these goals, firms are making voluntary efforts to reduce the incidence and magnitude of accident risks at their facilities; improving their relations with community officials and residents through better risk communication; and improving their emergency response plans in conjunction with local officials. (ABI)

Managing Workplace Cancer Risks

Singh, Jaswawt; Mahoney, William A.

National Underwriter (Property/Casualty/Employee Benefits) v91n13 PP: 26,66,70 Mar 30, 1987

A recent US District Court award of $108 million to the

family of a chemical plant worker who died of leukemia should be a signal to risk managers that health-related injuries or fatalities resulting from exposure to toxic substances in the workplace are cause for larger damage awards than occupational injuries or deaths from other causes. In general, chemically induced cancers are characterized by long latency periods, and genetic predisposition may govern the production of cancer from chemicals. About 43 chemicals are regulated as carcinogens by the various federal government agencies, and about 20 industrial chemicals and/or chemical processes have been associated with increased carcinogenic risks in workers. Asbestos exposure is the leading occupational and environmental health issue in the US. Successful management of carcinogenic risks involves the efforts of risk and insurance managers, legal staff, industrial hygienists, and environmental engineers and production managers. Tables. (ABI)

Pollution: An HPR Attack
Blinn, James D.; Levin, Michael R.
National Underwriter (Property/Casualty/Employee Benefits) v91n9 PP: 21,28 Mar 2, 1987

Providing meaningful financial and engineering protection against environmental impairment liability exposures has become a serious problem for many public and private organizations in the US. In response, attention has shifted toward developing captives, pools, and risk retention groups for the long-term management of pollution risks. A highly protected risk approach (HPR) may be used by a variety of captive programs. The HPR approach represents a long-term way to address the significant financial exposures borne by organizations storing and using chemical substances. It involves the development and refinement of a comprehensive set of engineering and operational standards for controlling each significant risk. The HPR approach relies extensively on the use of site inspections to ensure the adherence of facilities to the standards and to monitor significant changes over time. Detailed classification systems must be developed in defining key areas of exposure. (ABI)

POLLUTION LIABILITY INSURANCE AND THE INTERNALIZATION OF ENVIRONMENTAL RISKS,
KATZMAN MARTIN T.
UNIV OF TEXAS,
POLICY STUDIES REVIEW, FEB 86, V5, N3, P614(10)
JOURNAL ARTICLE CONCEPTUAL AND EMPIRICAL RESEARCH ON THE EFFECTS OF USING PRIVATE INSURANCE AS AN INSTRUMENT FOR REGULATING THE RISKS OF THE CHEMICAL CYCLE IS SUMMARIZED. THE INSTITUTIONAL CHOICES IN REGULATION ACTIVITIES THAT MAY CAUSE

LATENT DAMAGE ARE EXAMINED; INSURABILITY AND THE SUPPLY OF POLLUTION LIABILITY INSURANCE ARE ALSO CONSIDERED. AN EFFECTIVE APPROACH TO CHEMICAL RISK MANAGEMENT IS TO DEVELOP THE STATUTES, TORT LAW, AND INSURANCE AS A MUTUALLY REINFORCING TOOL. STATUTORY STANDARDIZATION CAN MAKE THE TORT PROCESS MORE PREDICTABLE AND MORE EFFECTIVE; A PREDICTABLE TORT PROCESS CAN MAKE POLLUTION RISKS MORE INSURABLE. (ENVL)

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BIBLIOGRAPHIES AND OTHER SOURCES .... this section highlights a variety of documents, including bibliographies, guides, handbooks, and other general reference works which describe management tools useful in environmental risk management.

National Air Toxics Information Clearinghouse: Bibliography of Selected Reports and 'Federal Register' Notices Related to Air Toxics, July 1986 (Interim rept.)

Post, B. K. ; Bloomhardt, M. A. ; Phelps, R. H. ; Pelland, A. S.

Radian Corp., Research Triangle Park, NC.

Sponsor: Environmental Protection Agency, Research Triangle Park, NC. Office of Air Quality Planning and Standards.

PB87-125787/XAB

Report No.: DCN-86-203-024-78-04; EPA/450/5-86/008

Jul 86 888p

Supersedes PB86-183456. Sponsored by Environmental Protection Agency, Research Triangle Park, NC. Office of Air Quality Planning and Standards.

Contract No.: EPA-68-02-3889

The purpose of the bibliography is to provide state and local agencies with citations to reports and Federal Register notices useful to them in developing and operating air toxics control programs. The edition of the bibliography updates, expands, and supersedes two bibliographies previously published by NATICH: Bibliography of Selected EPA Reports and Federal Register Notices (January 1985) and Selected Bibliography of Health Effects/Risk Assessment Information (July 1984). The citations selected for the bibliography were compiled through April 1986. (NTIS)

Risk COMMUNICATION

.... THE PROCESS OF EDUCATING AND INFORMING AN AUDIENCE TO MAKE BETTER PERSONAL AND SOCIETAL DECISIONS REGARDING RISK.

INFORMING THE DECISION-MAKER

COMPARISON OF KEY FEATURES OF THE HOUSE AND SENATE SUPERFUND BILLS,
MCCARTHY JAMES ; MELTZ ROBERT ; REISCH MARK E.
US LIBRARY OF CONGRESS CONGRESSIONAL RESEARCH SERVICE REPORT 86-508 ENR, JAN 7, 86 (18)
FED GOVT REPORT KEY FEATURES OF THE SUPERFUND BILLS PASSED BY THE HOUSE AND SENATE DURING THE FIRST SESSION OF THE 99TH CONGRESS ARE COMPARED. THE COMPARISON IS PRESENTED IN TABULAR FORM AND COVERS 10 ISSUES: TAX PROVISIONS, CLEANUP SCHEDULES, CLEANUP STANDARDS, SETTLEMENT PROCEDURES, COMMUNITY RIGHT-TO-KNOW, LEAKING UNDERGROUND STORAGE TANKS, CITIZEN SUITS, PRE-ENFORCEMENT AND PRE-COST RECOVERY REVIEW, R&D, AND FEDERAL FACILITIES. THE HOUSE BILL PROVIDES AN ESTIMATED $9.5 BILLION IN REVENUES OVER FIVE YEARS FROM PETROLEUM, CHEMICAL FEEDSTOCK, WASTE MANAGEMENT, AND IMPORTED DERIVATIVES TAXES. THE SENATE BILL PROVIDES AN ESTIMATED $7.3 BILLION IN REVENUES OVER FIVE YEARS FROM PETROLEUM, CHEMICAL FEEDSTOCK, AND MANUFACTURERS EXCISE TAXES. (ENVL)

The expanding scope of employers' duties under the hazard communication standard and state and local right-to-know laws.
Goldsmith, Willis J.
Employee Relations Law Journal 12 n4 705-711 Spr 1987 (LRI)

Hazard Communication One Year Later
Bradford, Hazel; Bluestone, Mimi
Chemical Week v139n25 PP: 73-74 Dec 17, 1986

The Occupational Safety & Health Administration's (OSHA) hazard communications standard has been in effect for one year, leading to thousands of citations for violations but very few fines. The standard requires chemical companies to label products hazardous to human health and safety.

Manufacturers that use such products must make material safety data sheets available to employees and train workers in the risks involved. A clarification by OSHA in June 1986 specified which infractions would be treated as more serious and has led to an increase in penalties. The AFL-CIO has criticized both industry implementation of the standard andOSHA's enforcement. The union is particularly unhappy with training programs, claiming that they are not being initiated in about one-third of cases and are poor in another third. OSHA is under a court order to expand the program to include other users of chemicals besides manufacturing. Tables. (ABI)

OSHA's Hazard Communication Standard: The Early Returns
Goldsmith, Willis J.
Employee Relations Law Jrnl v12n2 PP: 313-319 Autumn 1986

A recent rule issued by the Occupational Safety & Health Administration (OSHA) indicates that the Hazard Communication Standard (HCS) will be extended beyond the manufacturing sector. The rule is a response to an appeals court decision that sustained challenges to 3 aspects of the HCS: 1. its application only to manufacturing employers, 2. the apparent breadth of its preemption provision, and 3. the scope of its trade secret protections. The court ordered OSHA to narrow the trade secret provisionsof the HCS and to liberalize access to such information. The court also ruled that OSHA had not adequately justified limiting the HCS to the manufacturing sector. OSHA revised the HCS definition of "trade secret"and broadened the categories of people who may gain access to such information in nonemergency cases. OSHA also issued an advance notice seeking comments on expanding the HCS to cover all employees in all industries. References. (ABI)

Physician employers and 'right to know'.
Lumb G
Pa Med; VOL 90, ISS 2, 1987, P32-6
Human, Legislation, Medical *TRENDS, Occupational Diseases *CHEMICALLY INDUCED/PREVENTION & CONTROL, Pennsylvania Physicians * (NLM)

TIME IS RUNNING OUT FOR COMPLIANCE WITH HAZARD COMMUNICATION
Nemec MM
Hazardous Materials and Waste Management Magazine 4(2):37-40; 1986.
The Hazard Communication Standard of the Occupational Safety and Health Administration (OSHA) is reviewed. As of 25 May 1986, firms must have a written program that lists hazardous chemicals,

methods to inform employees about nonroutine tasks, methods to inform contractors about hazardous chemicals in the work area, and information explaining labeling, warning, and employee training procedures. Also, employees must be informed of the requirements of the Hazard Communication Standard and trained to detect releases of hazardous chemicals in the work area. OSHA requirements for Material Safety Data Sheets are discussed. OSHA health and physical hazards used in defining a hazardous chemical are listed. (NLM)

Washington's hazard communication standard.
Ellison, Christine
Gonzaga Law Review 21 n2 509-540 June 1986
Washington Industrial Safety and Health Act (LRI)

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INFORMING THE PUBLIC

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund) (P.L. 96-510), December 1986; as amended by the Superfund Amendments and Reauthorization Act of 1986 (P.L. 99-499).
United States. Laws, statutes, etc.
'87 v+226p
SERIES: 99th Cong., 2d sess.; Com. print; S. print 99-217; SD cat. no. Y4.P 96/10:S.prt.99-217;
ORDER INFO: Supt Docs pa
Prepared for the Committee on Environment and Public Works, U.S. Senate. Partial contents: Hazardous substances releases, liability, compensation; Pollution insurance; Emergency planning and community right-to-know; Radon gas and indoor air quality research. (PAIS)

The Hazardous Chemicals Right-to-Know Act: letting the public know what's next door. (Survey of Developments in North Carolina Law, 1985)
Spilsbury, John L.
North Carolina Law Review 64 n6 1330-1351 Aug 1986
North Carolina Hazardous Chemicals Right to Know Act (LRI)

Issues and Media Relations
Mindszenthy, Bart J.
Business Qtrly (Canada) v51n4 PP: 78-83 Mar 1987

Four key emerging issues are affecting media-organizational relations: 1. the right to know, 2. the business and entertainment of news, 3. the increasing specialization and fragmentation of the media, and 4. financial and investor relations through media. The right to know has led people and the media to ask tougher, more pointed questions of many organizations. Media is a very competitive industry, and as a result, the trend is toward more "on-the-spot" coverage of events, followed by quick analyses of complex situations. At the same time, the various media outlets are becoming more specialized and its people are better educated, prepared, and equipped. Finally, corporate financial results are of increasing interest today, and the media is prepared to scrutinize those numbers more closely. These issues have 3 significant implications for executives and public relations people alike -- that effective media relations is an ongoing process, that it is proactive, and that preparation is crucial, involving a media audit, media training, and media monitoring. (ABI)

Right-to-Know Law Asking for Flood of Disclosures
Baram, Michael
National Underwriter (Property/Casualty/Employee Benefits) v91n11 PP: 23-24 Mar 16, 1987

A new federal law requires companies producing or handling certain hazardous chemicals to report new information on these chemicals to federal, state, and local authorities. These officials, in turn, must use the information to develop plans for responding to chemical accidents endangering community residents. In addition, state and local officials must make much of the information and the emergency plans available to the general public. Congress enacted the Emergency Planning and Community Right to Know Act of 1986 as an amendment to the 1980 Superfund law. The 2 reports that firms handling certain chemicals must file on a periodic basis are: 1. a Materials Safety Data Sheet, and 2. an inventory of each of the chemicals at the facility. Another report must be filed with the Environmental Protection Agency. The long-term result of the law may be a reduction of accident hazards. (ABI)

RISK COMMUNICATION
RUCKELSHAUS W
CHEMTECH; 16 (9). 1986. 533-535.
HUMAN USA RIGHT-TO-KNOW REGULATION (NLM)

Superfund's Title III: Not Easy to Digest
MacKerron, Conrad B.; Rich, Laurie A.
Chemical Week v140n20 PP: 20-21 May 27, 1987

The Emergency Planning and Community Right-to-Know Act, a Superfund provision better known as Title III, imposes heavy emergency planning and hazardous substance reporting requirements on both regulators and regulated companies. Involved state and federal regulatory officials, who face problems with funding as well as data gathering, dissemination, and analysis, believe that the law will require extraordinary cooperation among government, the industry, and the public. A serious challenge will be to familiarize the estimated 1.5 million facilities that use, store, or emit hazardous substances with their responsibilities under the law. Since the Environmental Protection Agency (EPA) has limited enforcement resources, Title III may evolve into a primarily voluntary program of compliance. Congress has provided no funds for the EPA to run the program nor for state agencies responsible for collecting and analyzing hazardous waste data from industrial facilities. Charts. (ABI)

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INFORMING THE WORKER

THE ACCIDENT IN BHOPAL, INDIA: IMPLICATIONS FOR U.S. HAZARDOUS CHEMICAL POLICIES,
AIDALA JAMES
US LIBRARY OF CONGRESS CONGRESSIONAL RESEARCH SERVICE REPORT IB85022, MAR 6, 86 (13)
FED GOVT REPORT IN DECEMBER 1984, AN ACCIDENT AT A UNION CARBIDE CO. PESTICIDE PLANT IN BHOPAL, INDIA, KILLED AND INJURED THOUSANDS OF NEARBY RESIDENTS. THE EVENT HAS RAISED A VARIETY OF ISSUES CONCERNING THE MANUFACTURE AND HANDLING OF CHEMICAL PRODUCTS IN THE U.S. SOME OF THE MAJOR CONCERNS WHICH ALREADY HAVE BEEN OR ARE LIKELY TO BE THE SUBJECT OF CONGRESSIONAL SCRUTINY ARE IDENTIFIED. THESE INCLUDE CONTROLS ON THE MANUFACTURE AND USE OF CHEMICALS, COMMUNITY AND WORKER RIGHT-TO-KNOW OF CHEMICALS FOUND IN THE WORKPLACE AND CONSUMER PRODUCTS, AND CONTROLS ON INTERNATIONAL TRADE OF TOXIC CHEMICALS. RELATED CONGRESSIONAL ACTIVITY AND LEGISLATION ARE SURVEYED. (ENVL)

Challenges Confront Industrial Hygienists
Palisano, Peg
Occupational Hazards v49n5 PP: 87-90 May 1987

In a roundtable discussion, 4 industrial hygienists discussed current issues and trends affecting industrial health and safety. Gerald Sattelmeier of Chrysler notes that many operations that were once performed manually are now done by robots, and this reduces worker exposure to risks. Some facets

of the industrial hygienist's work are made more difficult by changes, such as quality circles, that greatly broaden an employee's exposure. In the chemical industry, the hygienist not only must be concerned with the workers but with the ultimate consumer of the product as well. New problems are emerging from the increased use of computers and small assembly operations. Joe Holtshouser of Goodyear warns that the tendency of large manufacturers to contract out as many operations as possible to cut costs could result in the proliferation of hazardous exposures through small plants since federal and state agencies lack the workforce to monitor many operations. The recently implemented hazard communication standard has had the greatest impact on industrial hygiene of all the standards issued by the Occupational Safety and Health Agency. (ABI)

Chemical Hazard Disclosure Obligations
Susser, Peter A.
Employment Relations Today v13n4 PP: 301-308 Winter 1986/1987

Manufacturing employees have recently become subject to the Hazard Communication Standard promulgated by the Occupational Safety and Health Administration (OSHA). As a result, employers who are chemical manufacturers or users must inventory hazardous chemicals, label them, maintain data sheets, and train workers in compliance with the law. The issue is complicated by state disclosure laws with which employers may also be required to comply. Implementation of the OSHA standard and its requirements are reviewed. At the present time, OSHA is considering a number of amendments to the standard, such as extending its scope to all employers, not just those engaged in manufacturing. Court rulings have further defined the scope and requirements of the Hazard Communication Standard. Ongoing litigation must further clarify the relationship between local, state, and federal laws in this area, but it is clear that the right of workers to know about hazardous materials with which they are working is an imperative that will remain important in the coming years. References. (ABI)

"CHIT": CHEMICAL HAZARD IDENTIFICATION AND TRAINING
Meck RD; Meck LG; Capuano AA
Young, R.A., ed.
HazPro '85: Proceedings of the HazPro '85 Professional Certification Symposium and Exposition; 1985 May 15-17; Baltimore, MD. Northbrook, IL: Pudvan Publishing Co.; 1985:543-547. .
Right-to-know laws and standards established by the Occupational Safety and Health Administration (OSHA) require employers to inform their workforce of hazards associated with

chemicals they are exposed to. Employers must train their employees at their initial assignment, whenever a new chemical is introduced, and for any nonroutine task. Employees should be aware of the location of Material Safety Data Sheets (MSDS), monitoring methods used to detect hazards, the location of personal protective equipment, and emergency procedures. CHIT, chemical hazard identification and training, is a graphic symbol system designed to help employers comply with OSHA standards and right-to-know laws. The system is color coded: red designates fire; yellow, reactivity; blue, health hazards; and green, personal protective equipment. CHIT includes a chemical hazard summary sheet that is a symbolic version of MSDS, six groups of adhesive labels for label and summary sheets, three hazard-type stickers, and three signalword stickers. CHIT appears to be an effective system. (NLM)

An employee's right to know about hazards in the workplace: OSHA's new hazard communication standard.
Dennard, H. Lane, Jr.
Georgia State Bar Journal 21 n3 119(4) Feb 1985
(LRI)

FLORIDA SUBSTANCE LIST, FLORIDA RIGHT-TO-KNOW LAW CHAPTER 442, INCLUDING CHAPTER 38F-41, FLORIDA ADMINISTRATIVE CODE (RULES OF THE DEPARTMENT OF LABOR & EMPLOYMENT SECURITY),
FLORIDA DEPT LABOR & EMPLOYMENT SECURITY REPORT, UNDATED (53)
STATE/LOCAL GOVT REPORT THE FLORIDA SUBSTANCE LIST IDENTIFIES THE SUBSTANCES COVERED BY THE STATE'S RIGHT-TO-KNOW LAW. THE STATUTE REQUIRES EMPLOYERS TO GIVE NOTICE TO EACH EMPLOYEE OF THE TOXIC SUBSTANCES INVOLVED IN HIS/HER EMPLOYMENT WHICH MAY ENDANGER OR CAUSE DEATH TO THE EMPLOYEE OR MEMBERS OF THE EMPLOYEE'S FAMILY. AN EMPLOYEE HAS AN INHERENT RIGHT TO KNOW ABOUT SUCH SUBSTANCES IN THE WORKPLACE. PROVISIONS OF THE STATUTE ARE DELINEATED, AND CONTENTS OF THE FLORIDA SUBSTANCE LIST ARE APPENDED. (ENVL)

Florida's (USA) right-to-know law.
ALEXIOU NG
Dep. of Comprehensive Med., Coll. of Med., Univ. of S. Fla., Box 41, 12901 N. 30th St., Tampa, Fla. 33612.
FLA SCI; 49 (3). 1986. 162-167.
Florida's Right To Know Law is a landmark piece of 1985 legislation for its potential for prevention of accidents and illness that may be work related. For some scientists the law will be an imposition on a free investigative spirit. For others, the law will merely reassure the worker that he/she is practicing good health and laboratory safety for himself and those for whom he/she is responsible. The best way to determine the steps needed to be compliant, is to review the law itself at least once and

then have a copy available for periodic referral purposes. The law intent is to protect the health and safety of the worker through informed consent. Workplace exposures to toxic and hazardous substance may cause disease or aggravate existing disease, and should be taken seriously. (NLM)

An introduction to the hazard communication standard
Anon
US Department of Labor, Occupational Safety and Health Administration, Room N3641, 200 Constitution Avenue, Washington, D.C. 20210, USA, 1985. 18p.+ 82 slides + sound tape.
A slide-tape programme on chemical safety with 82 slides covering the following: hazard determination; material safety data sheets; labels; written hazard communication programme, employee information and training; trade secrets. (NLM)

Is the Hazard Communication Standard Working?
Reid, Robert
Occupational Hazards v49n4 PP: 47-50 Apr 1987

On January 21, 1987, the United Steelworkers of America (USW) and Public Citizen Inc. filed a motion in the Third Circuit Court of Appeals seeking a ruling directing the Occupational Safety and Health Administration (OSHA) to order expansion of the hazard communication standard's scope within 2 weeks of the court's decision and to set the effective date of that expansion no more than 90 days after issuance of its order. An enormousamount of confusion and criticism surrounds the hazard communication standard, expansion of which was first ordered in May 1985. One problem is that there are more than 10,000 citations for violations of the standard; in addition, there are different interpretations of what constitutes compliance with a performance standard. Most of the violations concern requirements for: 1. written hazard communication programs, 2. employee information or training programs, 3. material safety data sheets, and 4. labeling. There also are allegations that some smaller manufacturers havenot even tried to comply. (ABI)

OSHA's Hazard Communication Standard
Mason, James L.
Vital Speeches v53n4 PP: 118-121 Dec 1, 1986

The hazard-communication standard developed by the Occupational Safety and Health Administration (OSHA) requires manufacturers to train their employees in the safe use of hazardous chemicals. The ''right-to-know''requirement means that employees must be trained at the time they are assigned to work with a hazardous chemical and must be retrained whenever

a new substance is introduced. Similar regulations are being prepared for nonmanufacturing industries. Many state and local communities have their own right-to-know laws on education and training. Annually, some 11,000 deaths and nearly 2 million injuries and illnesses result from work-related accidents and diseases. The new OSHA standard requires adapting training to the new environment. There will be continued growth in the use ofinteractive training systems, which offer employees the opportunity to participate and understand while meeting industry's need forcost-effectiveness. (ABI)

Right-to-know laws: maintaining compliance.
Wood JL
Resource Consultants Inc., Brentwood, Tenn.
Occup Health Saf; VOL 56, ISS 3, 1987, P20-1, 24, 27-9
Keywords: Computers; Consumer Advocacy *LEGISLATION & JURISPRUDEN; Environmental Pollutants *POISONING; Government Agencies; Human ; Occupational Diseases *CHEMICALLY INDUCED ; United States (NLM)

Seeking Toxics Data down on the Farm
Mullen, Theo; Rich, Laurie A.
Chemical Week v139n25 PP: 16 Dec 17, 1986

Nine farm workers in Texas have filed a class action suit seeking to reverse the exclusion of farm workers from the state's 1985 Hazard Communication Act. The law requires employers who store chemicals to educate employees about hazards and to issue suitable protective equipment. According to the lawyer for the employees, James Harrington, farm workers are the only group excluded under the act. Since virtually all the farm laborers covered by the lawsuit are Mexican-American, the suit also cites racism as an issue. The plaintiffs want material safety data sheets provided in Spanish and pesticide makers to conduct safety and training classes for farm workers. The National Agricultural Chemical Association agrees that farm workers should be covered by the act. (ABI)

SUCCESSFUL RIGHT TO KNOW TRAINING
Szepatowski BA
Young, R.A., ed.
HazPro '86: Proceedings of the HazPro '86 Professional Certification Symposium and Exposition; 1986 April 1-4; Baltimore, MD. Northbrook, IL: Pudvan Publishing Co.; 1986:85-96.
Right-to-know (RTK) regulations are designed to prevent adverse health effects from exposure to workplace chemicals. Employers, as well as employees, can benefit from RTK training. A comprehensive worker safety training program can increase worker productivity, minimize opportunities for liability suits,

and allow a firm to become eligible for rebate programs offered by insurance companies. Employee training begins with filling out Material Safety Data Sheets (MSDS). These sheets are filled out by the manufacturers of hazardous materials and must therefore be examined carefully for completeness. Training is required for each new employee and each time a new hazard is introduced into the workplace. The MSDS for each hazard should be accessible and thoroughly explained to all employees. Employees should understand all information on the labels of hazardous material containers. Training should include ample time for questions. At the end of RTK training programs, employees should sign a statement showing that they have attended the program and understood the material presented. (NLM)

Toward a meaningful "right-to-know": model legislation and commentary.
Kupfer, Nancy S.
Seton Hall Legislative Journal 9 n3 621-658 Summ 1986
Occupational Safety and Health Act of 1970 (LRI)